PHOTOFACT* FOLDER SET

*TRADE MARK

NO. 66

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The PHOTOFACT Servicer

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RECORD CHANGER

CROSS REFERENCE BY MANUFACTURER AND MODEL

The references in this Index of record changers refer to the section where these units will be found in the Photofact Automatic Record Changer Service Manual (1947) Volume No. 1, and in the Photofact Automatic Record Changer Service Manual (1948) Volume No. 2.

This cross reference cannot be considered as covering all variations of changers used in the radio receivers listed. Because of shortages in various sources of supply, radio receiver manufacturers are frequently compelled to use more than one make of changer in their instruments. Accordingly, it is entirely possible that you may find a different changer in the receiver than the one listed in this cross reference index. In such a case, we suggest that you review the pictures of the changers in the two Record Changer Volumes in order to locate the service information on an identical or similar record changer.

CROSS REFERENCE BY MANUFACTURER AND MODEL

Trade Name and Model	*Changer Name and Model*	*Vol.*	*Sec.*
ADMIRAL			
6B1	Admiral RC170, RC170A	1	4
6C71	Admiral RC200	1	5
6L1	Admiral RC170, RC170A	1	4
6M1	Admiral RC170, RC170A	1	4
6R11	Admiral RC180	2	45
6RP48-3A1	Admiral RC150	1	3
6RT42A	Admiral RC161	1	5
6RT43	Admiral RC160	1	5
6RT44	Admiral RC200	1	5
7C1	Admiral RC170, RC170A	1	4
7C65B	Admiral RC170, RC170A	1	4
7C65M	Admiral RC170, RC170A	1	4
7C65W	Admiral RC170, RC170A	1	4
7C73	Admiral RC170, RC170A	1	4
7G14	Admiral RC182	2	45
10A1	Admiral RC200	1	5
UL7C1	Admiral RC170, RC170A	1	4
AIRCASTLE			
626	Utah 550	1	32
641	Seeburg K	1	25
6547	Seeburg K	1	25
6611	Seeburg K	1	25
6612	Seeburg K	1	25
6613	Seeburg K	1	25
6630	Seeburg K	1	25
6631	Seeburg K	1	25
6632	Seeburg K	1	25
6634	Seeburg K	1	25
6635	Seeburg K	1	25
121124	Milwaukee-Erwood 11200	2	59
138104	Milwaukee-Erwood 11200	2	59
G518	V-M 800	1	37
WRA1-1	Aero Metal 47A	2	45
AIRCHIEF (See Firestone)			
AIR KING			
4700	Crescent 1000 Series	2	51
4704	Oak 6666	1	20
A725	Crescent 1000 Series	2	51
AIR KNIGHT			
N5-RD-291	Crescent 200 Series	1	10
AIRLINE			
54WG-2500A	Webster 50	1	38
54WG-2700A	Webster 50	1	38
64WG-2009A	General Instrument 205	1	15
64WG-2009B	General Instrument 205	1	15
64WG-2010B	Seeburg K	1	25
74BR-2701A	General Instrument 204	1	15
74BR-2702B	General Instrument 205	1	15
74KR-2706B	V-M800	1	37
74KR-2713A	V-M800	1	37
74WG-2002A	General Instrument 205	1	15
74WG-2009B	General Instrument 205	1	15
74WG-2010B	Seeburg K	1	25
74WG-2704A	V-M800	1	37
74WG-2709A	V-M800	1	37
84GDC-987A	Crescent 250 Series	2	48
84WG-2015A	Webster 148	2	77
84WG-2712A	Webster 70	1	40
84WG-2714A	V-M800	1	37
84WG-2718A, B	Webster 56	1	39
84WG-2720A	Webster 56	1	39
84WG-2721A, B	V-M800	1	37
84WG-2724A	Webster 56	1	39
ALLIED RADIO (See Knight)			
AMPLIFIER CORP. OF AMERICA			
710-A	International Elec. PT3	2	55
710-B	International Elec. PT3	2	55
710-C	International Elec. PT3	2	55
808	International Elec. PT3	2	55
810-B	International Elec. PT3	2	55

Trade Name and Model	*Changer Name and Model*	*Vol.*	*Sec.*
ANDREA			
CO-U15	Oak 6666	1	20
ANSLEY			
53	Webster 50	1	38
APEX			
192-A	Utah 650	1	32
ARIA			
554-1-61A	Utah 550	1	32
ARVIN			
150-TC	General Instrument 205	1	15
151-TC	General Instrument 205	1	15
665	General Instrument 205	1	15
AUDAR			
P-4A	Crescent 200 Series	1	10
P-5	V-M 200-B	1	35
RE-8A	General Ind. RC130L	1	13
AUTOMATIC			
667	Seeburg K	1	25
BELMONT			
5D-110	Utah 550	1	32
8A59	General Instrument 205	1	15
BENDIX			
613	General Instrument 205	1	15
656A	General Instrument 205	1	15
676B	General Instrument 205	1	15
676C	General Instrument 205	1	15
676D	General Instrument 205	1	15
697A	Milwaukee Erwood 10700	1	18
736B	Series 205	1	15
847B	Farnsworth P-51	1	11
1217	Farnsworth P-51	1	11
1217B	Farnsworth P-51	1	11
1217D	Farnsworth P-51	1	11
1518	Webster 56	1	39
1519	Webster 56	1	39
1521	Webster 50	1	38
1524	Webster 56	1	39
1525	Webster 56	1	39
1531	General Instrument 205	1	15
1533	General Instrument 205	1	15
BRUNSWICK			
BJ-6836	Webster 50	1	38
C-3300	Webster 50	1	38
D-6876	Farnsworth P-51	1	11
T-4000	Farnsworth P-51	1	11
T-4000 ½	Farnsworth P-51	1	11
T-4400 ½	Webster 56	1	38
CAPEHART			
501-D	Farnsworth P72-P73	2	52
CENTURY (20th)			
300	Oak 6666	1	20
CLARION			
11305	Milwaukee Erwood 10700	1	18
12110M	Webster 50	1	38
12310W	Milwaukee Erwood 10700	1	18
12708	Utah 650	1	33
C-101	Utah 550	1	32
C-105-A	General Instrument 205	1	15
COMMANDER			
3 Tube Record Player	Milwaukee Erwood 10700	1	18
CONCORD			
GR3ARC	Aero Metal 46A	1	6
7R3APW	Aero Metal 46A	1	6
CD61P	Utah 550	1	32

CROSS REFERENCE BY MANUFACTURER AND MODEL

Trade Name and Model	*Changer Name and Model*	*Vol.*	*Sec.*
CORONADO			
43-7601B	General Instrument 205	1	15
43-7651	General Instrument 205	1	15
43-7851	VM-800	1	37
43-9196	Utah 650	1	33
43-9201	Utah 550	1	32
CROSLEY			
9-202M	Webster 148	2	77
9-212M	Misc. Series 700F	2	86
9-213B	Misc. Series 700F	2	86
56TQ	V-M400	1	36
56TR	General Instrument 205	1	15
56TS	General Instrument 205	1	15
56TZ	V-M400	1	36
66CS	Seeburg K	1	25
66CSM	Seeburg K	1	25
68CP	Oak 6666	1	20
68CR	Oak 6666	1	20
86CR	Seeburg K	1	25
86CS	Seeburg K	1	25
87CQ	Seeburg K	1	25
106CP	Seeburg K	1	25
146CS	V-M400	1	36
DALBAR			
M-8	Webster 56	1	39
DEARBORN			
100	V-M 200B	1	35
DELCO			
R-1244	V-M 800	1	37
R-1251	Seeburg L	1	26
R-1252	Seeburg L	1	26
R-1253	Oak 6666	1	20
R-1254	Oak 6666	1	20
R-1255	Oak 6666	1	20
DETROLA			
558-1-49A	Utah 650	1	33
582	Utah 550	1	32
626	Utah 550	1	32
7156	Utah 650	1	33
7270	Utah 650	1	33
DEWALD			
A-605	General Instrument 205	1	15
A-605R	General Instrument 205	1	15
DYNAVOX			
AP-514	Milwaukee Erwood 10700	1	18
E C A			
106	General Instrument 205	1	15
121	Utah 650	1	33
131	General Instrument 205	1	15
Wire Recorder	Crescent 1000 Series	2	52
ECHOPHONE			
EC-306	General Instrument 205	1	15
EC-403	Seeburg L	1	26
EC-404	Seeburg L	1	26
EX-306	General Instrument 205	1	15
ELECTROMATIC			
606A	Utah 550	1	32
607A	Utah 550	1	32
APH-301A	Utah 550	1	32
APH-301C	Utah 550	1	32
ELECTRO-TONE			
555	Seeburg K	1	25
E/L (Electronic Labs.)			
710PB	Webster 56	1	39
710PC	Webster 56	1	39

Trade Name and Model	*Changer Name and Model*	*Vol.*	*Sec.*
EMERSON			
506	General Instrument 205	1	15
525	General Instrument 205	1	15
529	General Industries R70	1	12
537	Webster 56	1	39
546	General Instrument 205	1	15
548	General Instrument 205	1	15
549	Oak 6666	1	20
552	General Instrument 205	1	15
576A	General Instrument 205	1	15
579	Misc. Series 700R	2	88
ESPEY			
641	Seeburg K	1	25
642	Seeburg K	1	25
6540	Seeburg K	1	25
6541	Seeburg K	1	25
6545	Utah 550	1	32
6547	Seeburg K	1	25
FADA			
602	General Instrument 205	1	15
637	General Instrument 205	1	15
802	Misc. Series 700R	2	88
FARNSWORTH			
EC-260	Farnsworth P-51	1	11
EK-081	Farnsworth P-51	1	11
EK-082	Farnsworth P-51	1	11
EK-083	Farnsworth P-51	1	11
EK-262	Farnsworth P-51	1	11
EK-263BL	Farnsworth P-51	1	11
EK-263WL	Farnsworth P-51	1	11
EK-264BL	Farnsworth P-51	1	11
EK-265	Farnsworth P-51	1	11
EK-681	Farnsworth P-51	1	11
GK-100	Farnsworth P-51	1	11
GK-102	Farnsworth P-51	1	11
GK-103	Farnsworth P-51	1	11
GK-104	Farnsworth P-51	1	11
GK-140	Farnsworth P-51	1	11
GK-141	Farnsworth P-51	1	11
GK-142	Farnsworth P-51	1	11
GK-143	Farnsworth P-51	1	11
GK-144	Farnsworth P-51	1	11
FERRAR			
WR-11	General Instrument 205	1	15
FIRESTONE (Airchief)			
4-A-15	Farnsworth P-51	1	11
4-A-17	Utah 550	1	32
4-A-31	Farnsworth P-51	1	11
4-A-37	Farnsworth P-51	1	11
4-A-42	Farnsworth P-51	1	11
4-A-60	Webster 56	1	39
FREED-EISEMANN			
46	Webster 56	1	39
GAMBLE-SKOGMO (See Coronado)			
GAROD			
6DPS	Seeburg K	1	25
6DPS-A	Seeburg K	1	25
11FMP	Seeburg K	1	25
GENERAL ELECTRIC			
41	Webster 70	1	40
42	Webster 70	1	40
43	Webster 70	1	40
44	Webster 70	1	40
45	Webster 70	1	40
118	General Elec. P-6	2	55
119M	General Elec. P-6	2	55
303	General Instrument 205	1	15
304	General Instrument 205	1	15
326	Webster 56	1	39

CROSS REFERENCE BY MANUFACTURER AND MODEL

Trade Name and Model	Changer Name and Model	Vol.	Sec.
GENERAL ELECTRIC—Contd.			
327	Webster 56	1	39
354	General Instrument 205	1	15
355	General Instrument 205	1	15
417	General Instrument 205	1	15
502	Webster 56	1	39
GILFILLAN			
66P	General Instrument 204	1	14
66PM	General Instrument 204	1	14
GLOBE			
7CP-1	Oak 6666	1	20
62C	Oak 6666	1	20
GRANTLINE			
641	Seeburg K	1	25
6547	Seeburg K	1	25
HOFFMAN			
A-401	Webster 50	1	38
A-500	Seeburg K	1	25
A-501	Webster 56	1	39
B-400	Aero Metal 46-A	1	6
B-1000	Webster 50	1	38
C-501	Webster 70	1	40
C-503	General Industries RC130L	1	13
C-504	General Industries RC130L	1	13
C-511	Webster 70	1	40
C-514	General Industries RC130L	1	13
C-1006	Webster 79	1	41
C-1006	Webster 56	1	39
C-1007	Webster 79	1	41
C-1007	Webster 56	1	39
HOWARD			
472AC	V-M 800	1	37
472AF	V-M 800	1	37
472C	V-M 800	1	37
472F	V-M 800	1	37
901AP	Webster 50	1	38
906	V-M 400	1	36
906C	V-M 400	1	36
909M	Webster 50	1	38
KNIGHT (Allied Radio)			
5B-185	Milwaukee Erwood 10700	1	18
6D-360	Milwaukee Erwood 10700	1	18
7D-405	Misc. Series 700R	2	88
8B-210	General Instrument 205	1	15
11C-300	Seeburg K	1	25
11D-302	Seeburg S	2	67
LAFAYETTE (Radio Wire Television)			
J62	Oak 6666	1	20
J62C	Oak 6666	1	20
MC13	Crescent 200 Series	1	10
LEARADIO			
6610PC	Lear PC206A	1	16
6611PC	Lear PC206A	1	16
6612PC	Lear PC206A	1	16
6617PC	Lear PC206A	1	16
LEE TONE			
AP-100	Maguire ARC-1	1	17
LEWYT			
615A	Webster 56	1	39
LEXINGTON			
6545	Utah 550	1	32
MAGNAVOX			
154B	Webster 56	1	39
155B	Webster 56	1	39
CR-210	Webster 146	2	78

Trade Name and Model	Changer Name and Model	Vol.	Sec.
MAGUIRE			
700A	Maguire ARC-1	1	17
700E	Maguire ARC-1	1	17
MAJESTIC			
5A445	Milwaukee Erwood 10700	1	18
5A445R	Milwaukee Erwood 10700	1	18
5AK731	Aero Metal 46-A	1	6
5AK780	Aero Metal 46-A	1	6
6FM773-L	Aero Metal 46-A	1	6
7C447	General Instrument 205	1	15
7JK777R	Aero Metal 46A	1	6
7S433	Milwaukee Erwood 10700	1	18
7S450	Milwaukee Erwood 10700	1	18
7S470	Milwaukee Erwood 10700	1	18
7YR753	St. George 1100	1	29
7YR772	St. George 1100	1	29
8FM775	Oak 6666	1	20
8FM776	Oak 6666	1	20
8JL885	Aero Metal 47A	2	46
8S452	Seeburg K	1	25
8S473	Seeburg K	1	25
12FM475	V-M 400	1	36
12FM778	V-M 400	1	36
12FM779	V-M 400	1	36
MANTOLA			
R630-RP	Crescent 200 Series	1	10
R655-W	Crescent 200 Series	1	10
R75152	Utah 7000	1	34
R76162	Utah 7000	1	34
R78162	Utah 7001	2	73
MARK SIMPSON (See Masco)			
MASCO			
MA35	Oak 6666	1	20
MA35RC	Oak 6666	1	20
MCR-5	Oak 6666	1	20
RK-5	General Industries R90	1	12
MECK			
CD-500	Crescent 250 Series	2	50
MEISSNER			
9-1065	General Industries R90	1	12
2961	Seeburg M	1	27
MIDWEST			
R12	V-M 800	1	37
RG12	V-M 800	1	37
RT12	V-M 800	1	37
R16	V-M 400 Late	2	73
RG16	V-M 400 Late	2	73
RT16	V-M 400 Late	2	73
S-12	Crescent 200 Series	1	10
SG12	Crescent 200 Series	1	10
ST12	Crescent 200 Series	1	10
S16	Crescent 200 Series	1	10
ST16	Crescent 200 Series	1	10
MOLDED INSULATION (Wire Tone)			
MR-6	St. George 1100	1	29
MONITOR			
M-3070	Universal Camera 100	1	31
RA-50	Universal Camera 100	1	31
MOTOROLA			
55F11	Motorola B24RC, B25RC, B27RC, B28RC	1	19
65F11	Motorola B24RC, B25RC, B27RC, B28RC	1	19
65F21	Motorola B24RC, B25RC, B27RC, B28RC	1	19
67F11	Motorola RC-30	2	60
67F12	Motorola RC-30	2	60
6712B	Motorola RC-30	2	60
68F11	Motorola RC-30	2	60
68F12	Motorola RC-30	2	60
75F21	Motorola B24RC, B25RC, B27RC, B28RC	1	19

CROSS REFERENCE BY MANUFACTURER AND MODEL

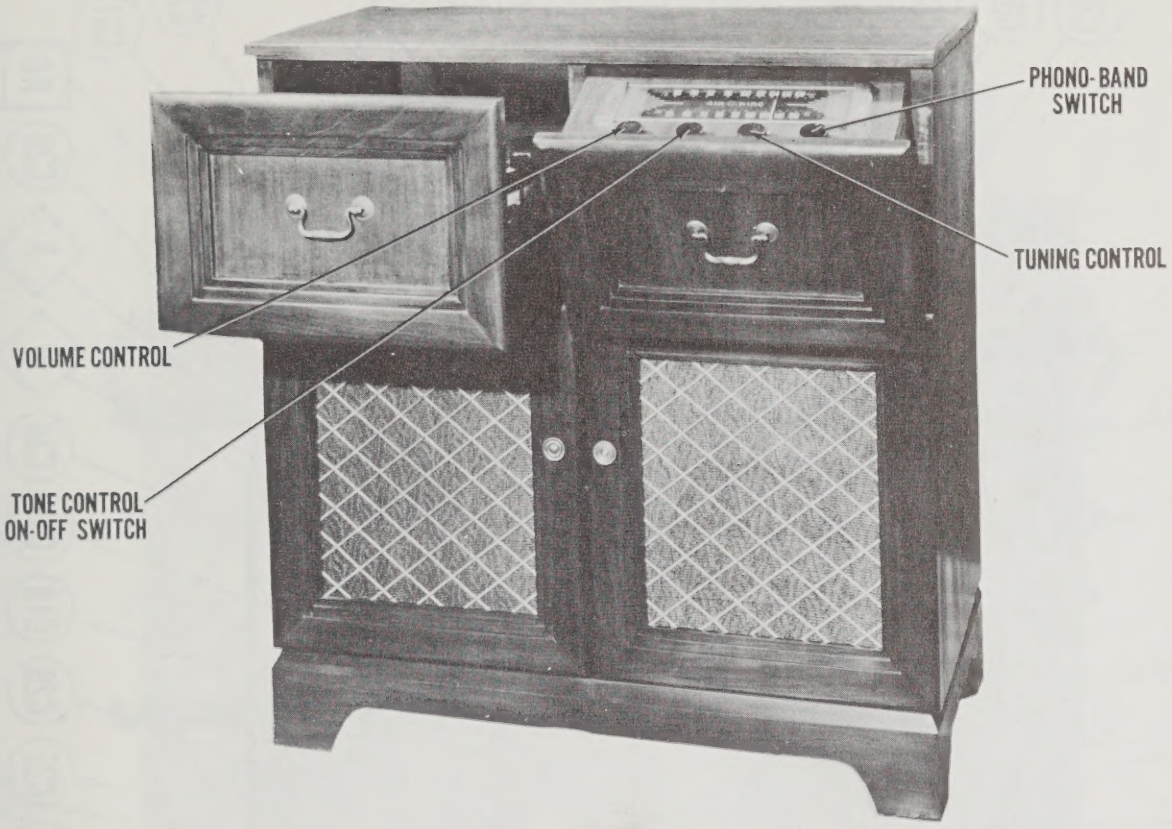
Trade Name and Model	Changer Name and Model	Vol.	Sec.
MOTOROLA—*Contd.*			
75F31	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
75F31A	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
75F31B	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
76F31	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
77FM21	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
77FM22	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
77FM22WM	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
77FM23	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
85F21	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
88FM21	Milwaukee-Erwood 11200	2	59
95F31B	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
95F33	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
96F31	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
107F31	Seeburg L	1	26
107F31B	Seeburg L	1	26
WR-6	Motorola B24RC, B25RC, B27RC, B28RC..	1	19
MUSITRON			
SRC-3	Crescent 200 Series	1	10
OLYMPIC			
6-617	Seeburg K	1	25
7-622	Misc. Series 700R	2	88
7-638	Misc. Series 700R	2	88
7-724	Seeburg L	1	26
7-925	Webster 56	1	39
7-934	Webster 56	1	39
7-936	Webster 56	1	39
7-939	Webster 56	1	39
8-618	Seeburg K	1	25
PHILCO			
46-1201	Philco M-7	1	23
46-1203	Philco D-10	1	21
46-1209	Philco D-10A	1	21
46-1213	Philco M-4	1	22
46-1226	Philco D-10	1	21
47-1227	Philco D-10	1	21
47-1230	Philco D-10A	1	21
48-1201	Philco M-7	1	23
48-1253	Philco M-8	2	61
48-1256	Philco D-10	1	21
48-1260	Philco M-7	1	23
48-1262	Philco D-10	1	21
48-1263	Philco D-10	1	21
48-1264	Philco D-10	1	21
48-1266	Philco D-10	1	21
48-1270	Philco M-4	1	22
48-1274	Philco M-4	1	22
48-1276	Philco M-4	1	22
48-1282	Philco D-10	1	21
48-1284	Philco M-8	2	61
48-1290	Philco D-10A	1	21
49-1401	Philco M-7	1	23
49-1405	Philco M-9	2	61
49-1605	Philco M-9C	2	62
49-1606	Philco M-9	2	61
49-1607	Philco M-9C	2	62
49-1609	Philco M-9C	2	62
49-1613	Philco M-9C	2	62
PHILHARMONIC			
100C	Crescent 200 Series	1	10
100T	Universal Camera 100	1	31
6810	Seeburg K	1	25
8701	Seeburg K	1	25
8702	Seeburg K	1	25
8703	Seeburg K	1	25
8710	Seeburg K	1	25
8711	Seeburg K	1	25
8712	Seeburg K	1	25
PHILLIPS			
66	V-M 400	1	36
PURE OIL (See Puritan)			
PURITAN			
503	General Instrument 205	1	15
RCA			
55AU	Crescent 200 Series	1	10
55U	Crescent 200 Series	1	10
58AV	Seeburg L	1	26
58V	Seeburg L	1	26
59AV1	Seeburg L	1	26
59V1	Seeburg L	1	26
65AU	Crescent 200 Series	1	10
65U	Crescent 200 Series	1	10
67AV1	Crescent 200 Series	1	10
67V1	Crescent 200 Series	1	10
77U	RCA RP-176	1	24
77V1	Crescent 200 Series	1	10
77V2	Crescent 200 Series	1	10
610V1	Seeburg L	1	26
610V2	Seeburg L	1	26
612V1	RCA RP-176	1	24
612V2	RCA RP-176	1	24
612V3	RCA RP-176	1	24
711V2	Seeburg L	1	26
RADIOLA			
75ZU	RCA RP-178	2	68
RADIONIC			
Y62W	General Instrument 205	1	15
Y728	General Instrument 205	1	15
RADIO WIRE TELEVISION (See Lafayette)			
RECORDIO			
7D44	General Industries RC130L	1	13
7E40	General Industries RC130L	1	13
7E44	General Industries RC130L	1	13
REMLER			
7310	Webster 56	1	39
SEARS, ROEBUCK (See Silvertone)			
SENTINEL			
1U-293CT	General Instrument 205	1	15
292K	General Instrument 205	1	15
293CT	General Instrument 205	1	15
296B	Webster 56	1	39
296M	Webster 56	1	39
SILVERTONE			
6100	Utah 550	1	32
6105	Utah 550	1	32
6111	General Instrument 204	1	14
7100	General Instrument 205	1	15
7115	General Instrument 205	1	15
7116	General Instrument 205	1	15
7117	Utah 650	1	33
7152	Utah 550	1	32
7153	Utah 650	1	33
8080	Utah 7000	1	34
8086A	Silvertone 101.771 (771)	1	28
8103	Silvertone 101.771 (771)	1	28
8105A	V-M 400	1	36
8127	Silvertone 101.771 (771)	1	28
8127	Silvertone 101.761-2, 101.762-2	2	68
8128	Silvertone 101.771 (771)	1	28
8128	Silvertone 101.761-2, 101.762-2	2	68
8149	Utah 7000	1	34
8153	Utah 7000	1	34
8153A	Utah 7000	1	34
SIMPLON			
6106A	General Instrument 204	1	14
6111A	General Instrument 204	1	14
7111	Seeburg K	1	25
CA-5	Crescent 200 Series	1	10

CROSS REFERENCE BY MANUFACTURER AND MODEL

Trade Name and Model	*Changer Name and Model*	*Vol.*	*Sec.*
SONORA			
401	Crescent 350 Series	2	51
RKRU-215	General Instrument 205	1	15
RMR-219	Oak 6666	1	20
WBRU-239	Crescent 250 Series	2	50
WKRU-254A	Crescent 250 Series	2	50
WLRU-219A	Oak 6666	1	20
SPARKS-WITHINGTON (See Sparton)			
SPARTON			
6AW26PA	Seeburg K	1	25
10BW76PA	Seeburg K	1	25
1005	Seeburg L	1	26
1006	Seeburg L	1	26
1007	Seeburg L	1	26
1008	Seeburg L	1	26
1010	V-M 800	1	37
1030	V-M 800	1	37
1030A	V-M 800	1	37
STEWART-WARNER			
72CR16	General Instrument 204	1	14
72CR26	General Instrument 204	1	14
A92CR6	V-M 400	1	36
A92CR6S	V-M 400	1	36
A92CR35	V-M 400	1	36
B72CR1	Aero Metal 47A	2	45
STROMBERG-CARLSON			
1101HPW	V-M 400	1	36
1135PFM	Seeburg M	1	27
1135PLM	Seeburg M	1	27
1135PLW	Seeburg M	1	27
1210M2-M	Seeburg L	1	26
1210M2-W	Seeburg L	1	26
1210M2-Y	Seeburg L	1	26
1210PGM	Seeburg L	1	26
1210PGW	Seeburg L	1	26
1210PLM	Seeburg L	1	26
TELEQUIP			
5140-A	Utah 550	1	32
TELE-TONE			
133	General Instrument 205	1	15
134	General Instrument 205	1	15
183	Misc. Series 700R	2	88
TELEVOX			
RP	Crescent 200 Series	1	10
TEMPLE			
G-518	V-M 800	1	37
G-722	V-M 400	1	36
G-725	V-M 400	1	36
G-1430	V-M 400	1	36
T-617	Utah 550	1	32
TEMPLETONE (See Temple)			
TRAV-LER			
6050	Aviola 100	1	7
TRUETONE			
D1644	Utah 550	1	32
D1645	Oak 6666	1	20
D1747	Utah 550	1	32
D1748	Utah 550	1	32
D1752	Utah 650	1	33
D1845	Oak 6666	1	20
D1846A	Oak 6666	1	20
D1846B	Oak 6666	1	20
D1846C	Oak 6666	1	20
D2604	Crescent 200 Series	1	10
D2642	Crescent 200 Series	1	10
D2645	General Instrument 205	1	15
D2748	Utah 550	1	32
D2851	Utah 550	1	32
U. S. TELEVISION			
5D66	Seeburg K	1	25
8-16M	Seeburg K	1	25
V-M			
1001-A	V-M 200B	1	35
VIEWTONE			
RC-201A	Maguire ARC-1	1	17
RRC-201	Maguire ARC-1	1	17
WATTERSON			
ARC-4591A	Webster 56	1	39
WESTINGHOUSE			
H-107	General Instrument 205	1	15
H-108	General Instrument 205	1	15
H-110	General Instrument 205	1	15
H-111	General Instrument 205	1	15
H-117	General Instrument 205	1	15
H-119	General Instrument 204	1	14
H-122	General Instrument 205	1	15
H-130	General Instrument 205	1	15
H-153	General Instrument 205	1	15
H-153A	General Instrument 205	1	15
H-155	General Instrument 205	1	15
H-161	V-M 800	1	37
H-164	V-M 400	1	36
H-166	V-M 400	1	36
H-167	V-M 400	1	36
H-168	V-M 800	1	37
H-168A	V-M 800	1	37
H-169	V-M 400	1	36
H-171	General Instrument 205	1	15
H-186M	V-M 400 Late	2	73
H-187	V-M 400 Late	2	73
H-190	Webster 148	2	77
H-191	Westinghouse 4914	2	80
WILCOX GAY (See Recordio)			
WOOLAROC			
3-20A	V-M 400	1	36
3-29A	General Instrument 205	1	15
3-70A	V-M 400	1	36
3-71A	V-M 400	1	36
ZENITH			
5R080	Zenith S-11468	1	42
5R086	Zenith S-11468	1	42
6R084	Zenith S-11468	1	42
6R086	Zenith S-11468	1	42
6R087	Zenith S-11468	1	42
7R070	Zenith S-11680	1	43
7R887	Zenith S-14004	2	85
9H079	Zenith S-11680	1	43
9H079E	Zenith S-11680	1	43
9H079R	Zenith S-11680	1	43
9H081	Zenith S-11680	1	43
9H082R	Zenith S-11680	1	43
9H085R	Zenith S-11680	1	43
9H088R	Zenith S-11680	1	43
9H881	Zenith S-11680	1	43
9H882R	Zenith S-11680	1	43
9H885	Zenith S-11680	1	43
9H888R	Zenith S-11680	1	43
12H090	Zenith S-11680	1	43
12H091	Zenith S-11680	1	43
12H092	Zenith S-11680	1	43
12H093	Zenith S-11680	1	43
12H094	Zenith S-11680	1	43
14H789	Zenith S-14002	2	84

AIR KING MODEL 800

AIR KING MODEL 800



AIR KING MODEL 800

AIR KING MODEL 800

TRADE NAME	Air King, Model 800
MANUFACTURER	Air King Products Co. Inc., 170-53rd St., Brooklyn 32, New York
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna.
TUBES(EIGHT)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 1st IF Amp., 6BA6 FM 2nd IF Amp., 6H6 Ratio Det., 6AT6 AM DET-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	110-120 Volts AC RATING: .56 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	535-1620KC FREQ. MOD. 87.25-108.75MC

DISASSEMBLY INSTRUCTIONS

1. Remove the four push-on type knobs.
2. Remove loop and dipole antenna leads from their respective terminals.
3. Remove phono motor and phono input plugs. Remove speaker plug at speaker.
4. Remove chassis mounting screws. The chassis may now be removed from the cabinet.
5. Remove four 11/32" hex nuts attaching speaker to cabinet. Remove speaker.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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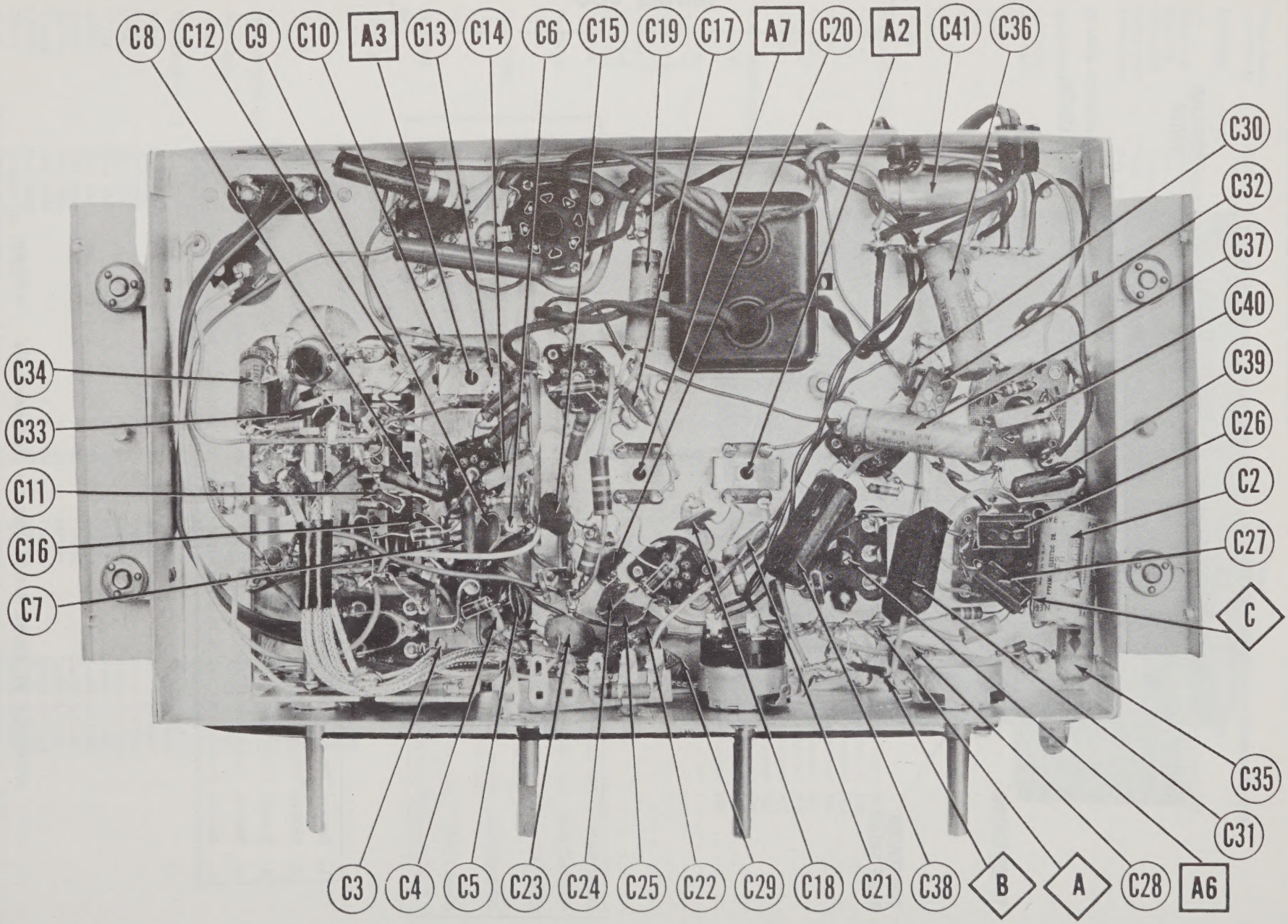
C8
C12
C9
C10
A3
C13
C14
C6
C15
C19
C17
A7
C20
A2
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C36
C30
C32
C37
C40
C39
C26
C2
C27
C
C34
C33
C11
C16
C7
C35
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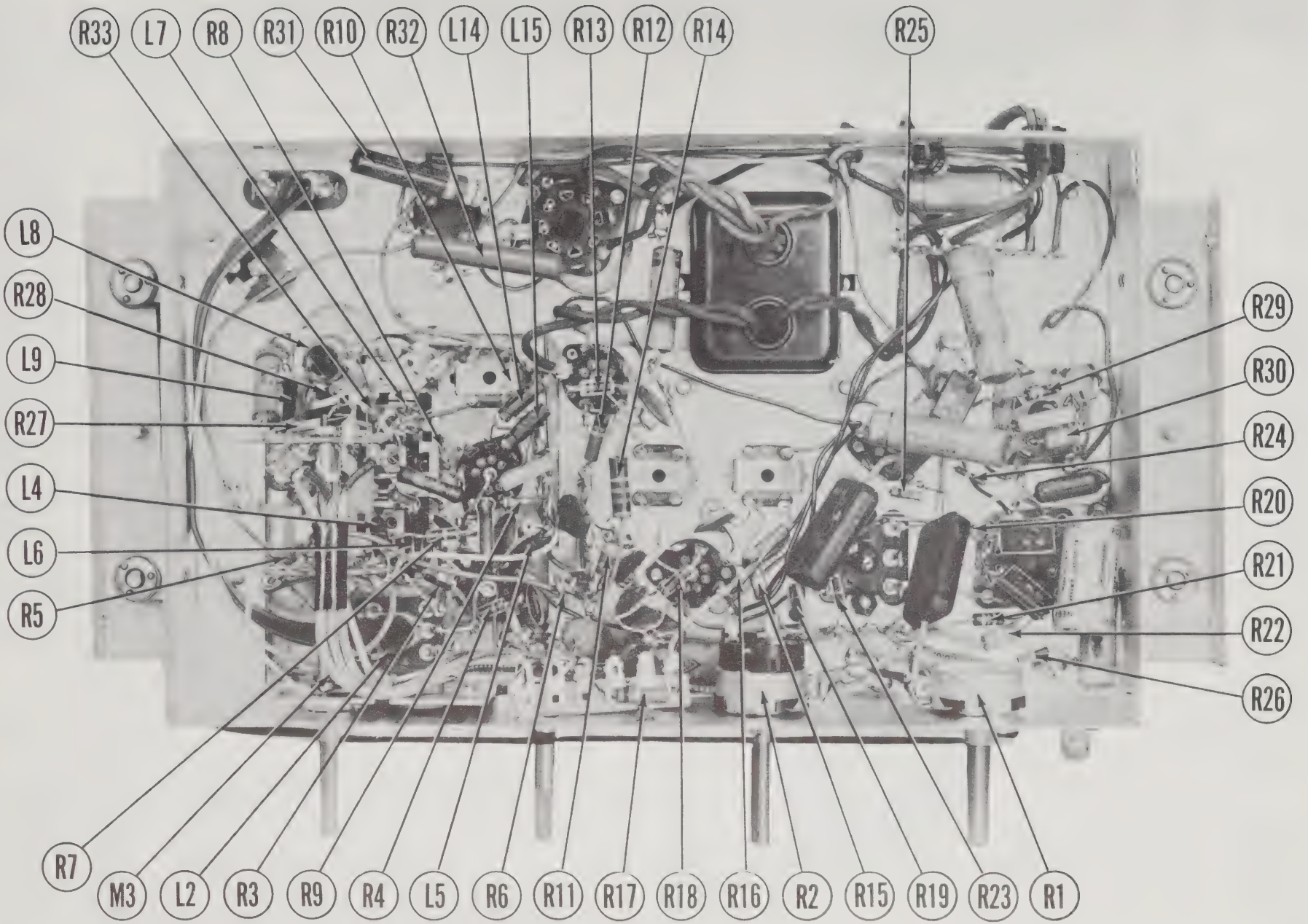
C38
B
A
C28
A6


R33
L7
R8
R31
R10
R32
L14
L15
R13
R12
R14
R25
L8
R28
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R27
L4
L6
R5
R29
R30
R24
R20
R21
R22
R26
R7
M3
L2
R3
R9
R4
L5
R6
R11
R17
R18
R16
R2
R15
R19
R23
R1

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	1st IF Amp.	6BA6	6BA6	7BK	
V4	2nd FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Detector	6H6	6H6	7Q	
V6	DET-AVC-AF	6AT6	6AT6	7BT	
V7	Power Output	6V6GT	6V6GT	7AC	
V8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: AIR KING PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	300	20120	AF862J4A	UP		DY-406	EL-432	◓Filter
B	40	300			43145C				■Filter
C	10	300							▲Decoupling
D	25	25							Output Cath. Bypass
C2	8	50		PRS150/8	BR815		M-8-150	UT-81	Stabilizing Cap.
C3	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Coupling
C4	100			1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Cath. Bypass
C5	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C6	18			1468-000025	5W5Q2	NP0K-20	MO.5-425	MS-42	RF Plate Decoupling
C7	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Coupling
C8	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C9	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Anode Bypass
C10	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Decoupling
C11	5			1469-000005	5R5V5	NP0K-5	MO5.5-55	MS-55	Fixed Trimmer ± 0.25MMF
C12	500		1985	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Bypass - Button Mica
C13	24			1469-000025	5R5J25	NP0L-25	MO5.5-425	MS-425	Fixed Trimmer ± 5%
C14	500	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	IF Coupling
C15	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C16	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Filament Bypass
C17	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Cath. Bypass
C18	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Plate Decoup.
C19	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	1st IF Screen Bypass
C20	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C21	120	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter Note 1
C22	120	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter Note 1
C23	.05	400		P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C24	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Cath. Bypass
C25	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
C26	220	500		1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode Load Cap
C27	220	500		1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode Load Cap
C28	.001	400		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	De-emphasis
C29	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C30	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C31	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C32	120	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Tone Compensation Note 1
C33	220	500		1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Tone Compensation
C34	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Tone Compensation
C35	.02	400		P488-02	GT4S2		ST-4-02	TM-12	Tone Compensation
C36	.05	400		P488-05	GT4S5		ST-4-05	TM-15	RF Bypass
C37	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C38	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Tone Compensation
C39	5600	400		P688-005	GT6D5		ST-6-005	TM-25	Output Plate Bypass Note 2
C40	500	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Bypass Note 3
C41	.05	600		P688-05	TVC6S5		XTT-6-05	PX-156	Line Filter

Note 1. When Either Item C21 Or C22 Are Replaced, Replace Both With Capacitors Of Equal Value. Some Models Use 100MMF In This Application.
Note 2. Some Models Use 5000MMF In This Application.
Note 3. Not Used In All Models.

PARTS LIST AND DESCRIPTIONS (Continued)

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: AIR KING PART No.	JENSEN PART No.	QUAM PART No.	INSTALLATION NOTES
SP1	FIELD	V.C. IMP.	58112	ST-120 MOD.P10-S*	10A31	*Replace Output Transformer To Match 6-8Ω Voice Coil
	PM	3.1Ω				
	CONE DIA.	V.C. DIA.				
SP2	10"	1"				

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: MEISSNER PART No.
L1	FM Dipole Ant.	0Ω			
L2	FM Ant.Coil	0Ω	0Ω	28239	
L3	AM Loop Ant	1Ω		28243	
L4	RF Ant. Choke	0Ω		28229	
L5	RF Plate Choke	0Ω		28242	
L6	FM RF Coil	0Ω		28222	
L7	FM Osc.Coil	0Ω		28221	
L8	AM Osc.Coil	7.5Ω		28244	14-1060
L9	RF Choke	0Ω		28229	
L10A	FM 1st IF	.8Ω		3382	
B	AM 1st IF	8Ω			
L11	FM 2nd IF	.5Ω	.5Ω	3381	
L12	AM 2nd IF	15Ω	15Ω	3383	16-6678
L13	Ratio Det.	1Ω	.1Ω	3539	
L14	Fil. Choke	0Ω		28229	
L15	Fil. Choke	0Ω		28229	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA:	NOTES
M1	Bayonet	6-8V	0.15A	Brown			Type #47

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: AIR KING PART No.	REPLACEMENT DATA: ASTATIC PART No.	REMARKS
M2		QT3-M	

MISCELLANEOUS

ITEM No.	PART NAME	AIR KING PART No.	NOTES
M3	Switch	3797	Band
M4	2 Gang Var. Cap.	1698	(15-460MMF, 35-212MMF)
	Dial Crystal	4280	
	Dial Pointer	41111	
	Knob	39184-1	Mahogany (Selector)
	Knob	39183-1	Mahogany (Volume, Tone, Tuning)
	Knob	39184-2	Walnut (Selector)
	Knob	39183-2	Walnut (Volume, Tone, Tuning)
	Knob	39184-3	White (Selector)
	Knob	39183-3	White (Volume, Tone, Tuning)

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	AIR KING PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	500KΩ	½	2494	Q13-133X	T-78	Volume control tapped @ 100KΩ
R2A	250KΩ	½	2522	Q11-130	M-55-S	Tone control
B	Switch		Not Req.	76-1	SW-A	Attach to R2A per instructions

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	AIR KING PART No.	IRC PART No.	
R3	1 Meg	½		BTS-1 Meg	RF Grid
R4	68Ω	½			RF Cathode
R5	470KΩ	½		BTS-470K	AVC Network
R6	4700Ω	½		BTS-4700	RF Plate Decoupling
R7	10Ω	½			Parasitic Suppressor
R8	22KΩ	½		BTS-22K	Osc. Grid
R9	4700Ω	½		BTS-4700	Osc. Anode
R10	27KΩ	½		BTS-27K	IF Trans. Shunt
R11	3300Ω	½		BTS-3300	Converter Decoupling
R12	2 Meg	½		BTS-2.2 Meg	1st IF Grid
R13	68Ω	½			1st IF Cathode
R14	15KΩ	1		BTA-15K	1st IF Screen Decoupling
R15	8000Ω	½		BTS-8200	1st IF Plate Decoupling
R16	22KΩ	½		BTS-22K	Diode Filter
R17	2 Meg	½		BTS-2.2 Meg	AVC Network
R18	68Ω	½			2nd FM IF Cathode
R19	6800Ω	1		BTA-6800	2nd FM IF Decoupling
R20	6800Ω	½		BTS-6800	Rat. Det. Diode Load
R21	6800Ω	½		BTS-6800	Rat. Det. Diode Load
R22	470KΩ	½		BTS-470K	AVC Network
R23	22KΩ	½		BTS-22K	De-emphasis
R24	220KΩ	½		BTS-220K	AF Plate
R25	10 Meg	½		BTS-10 Meg	AF Grid
R26	22KΩ	½		BTS-22K	Tone Compensation
R27	47KΩ	½		BTS-47K	Phono Tone Compensation
R28	1.5 Meg	½		BTS-1.5 Meg	Phono Tone Compensation
R29	100KΩ	½		BTS-100K	Bias Network
R30	470KΩ	½		BTS-470K	Output Grid
R31	390Ω	1		BTA-390	Output Cathode
R32	1100Ω	7		AB-1100	Filter
R33	15KΩ	½		BTS-15K	FM Osc. Coil Shunt See Note

Note. Not Used In All Models.

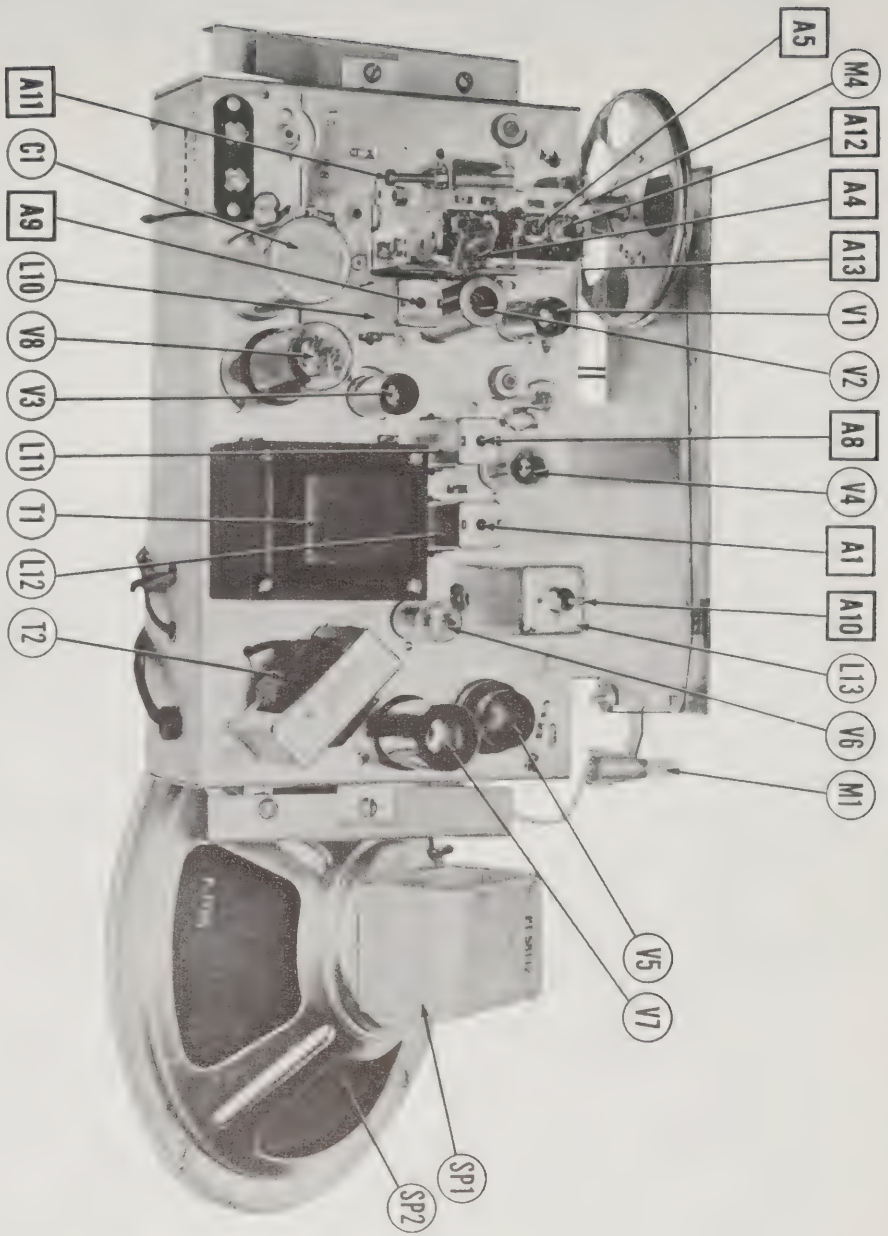
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	AIR KING PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .56A	510VAC CT @ .080ADC	5VAC @ 2A	6.5VAC @ 2.3A	1092	P-6011†	PH-70B†	P-2951†

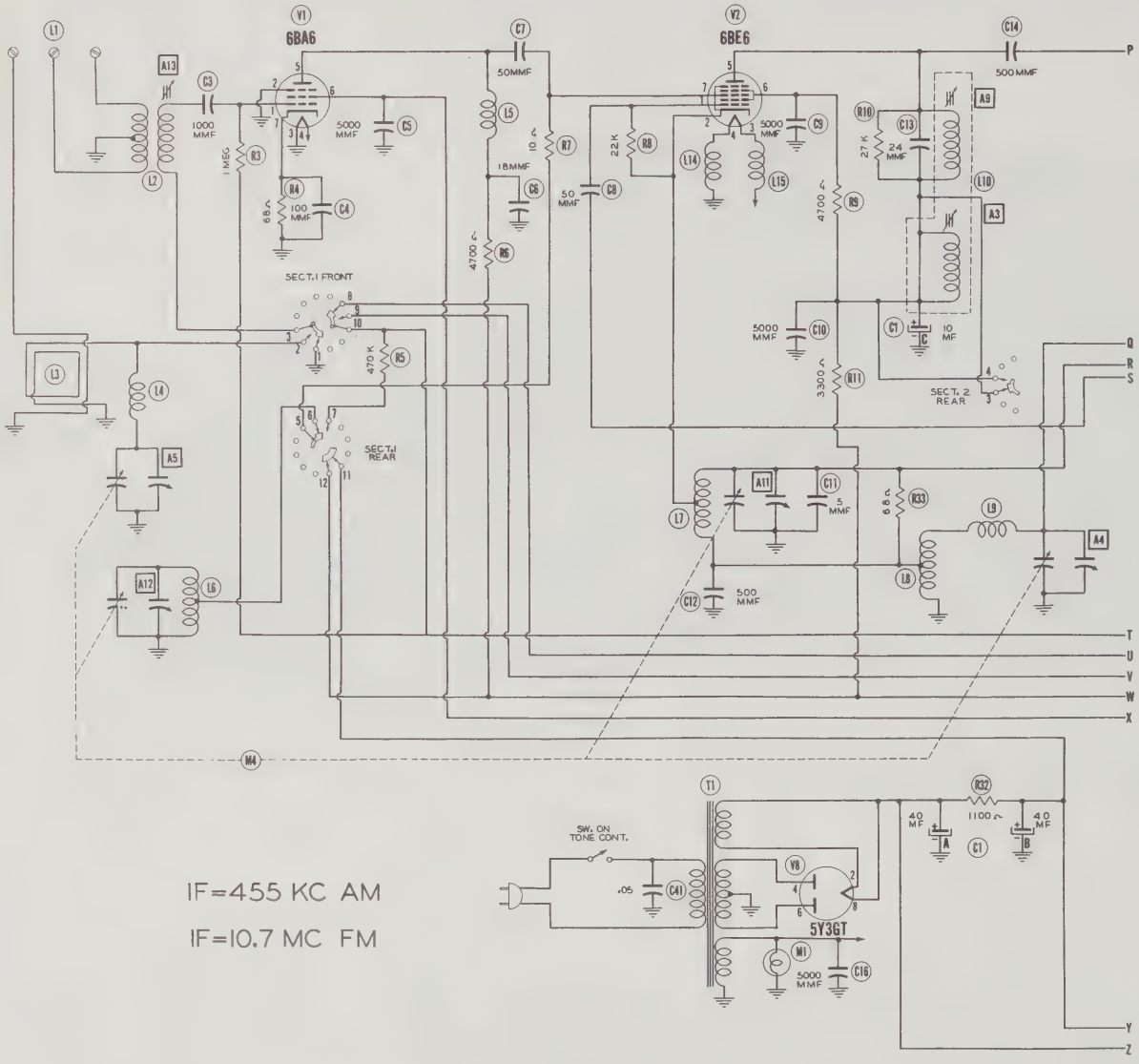
†Add Series Resistor To Reduce Plate Voltage.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		AIR KING PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	7.6KΩ	3.1Ω	70Ω	.8Ω	1349	A-3825	RO-9	A-2903#	#Drill One New Mtg. Hole



DATE 7/49 4914-1 SET #66 FOLDER #1



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	-.1VDC	0V	0V	6.3VAC	165VDC	105VDC	.9VDC	
V 2	6BE6	5-8VDC	0V	6.3VAC	0V	155VDC	110VDC	-.4VDC	
V 3	6BA6	-.1VDC	0V	6.3VAC	0V	125VDC	105VDC	.9VDC	
‡V4	6BA6	0V	0V	0V	6.3VAC	90VDC	87VDC	.9VDC	
‡V5	6BE6	0V	0V	6VDC	6.2VDC	6.2VDC	6.2VDC	6.3VAC	6.5VDC
V 6	6AT6	-.6VDC	0V	0V	6.3VAC	-.4VDC	-.4VDC	77VDC	
V 7	6V6GT	0V	0V	230VDC	200VDC	0V	6.4VDC	6.3VAC	11VDC
V 8	5Y3GT	0V	250VDC	0V	250VAC	0V	250VAC	0V	250VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.
‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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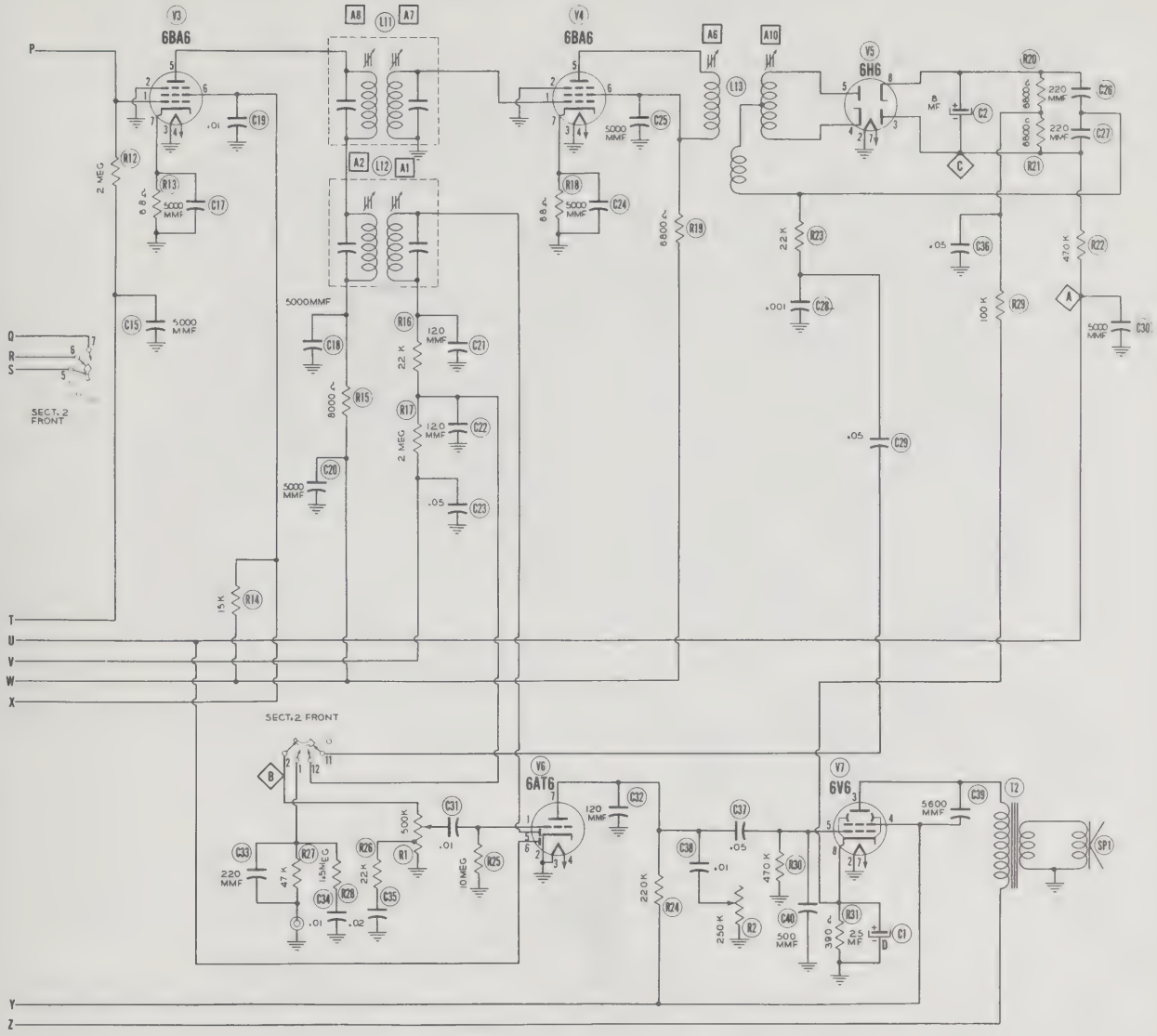

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	3.5 Meg.	0Ω	0Ω	.2Ω	*8.5KΩ	*16KΩ	68Ω	
V 2	*6BE6	22KΩ	.5Ω	.3Ω	.2Ω	*4.3KΩ	*9KΩ	3 Meg.	
V 3	6BA6	4 Meg.	0Ω	.2Ω	0Ω	*10KΩ	*16KΩ	68Ω	
‡V4	6BA6	.5Ω	0Ω	0Ω	.2Ω	*8KΩ	*8KΩ	68Ω	
‡V5	6H6	0Ω	0Ω	110KΩ	Inf.	Inf.	Inf.	.2Ω	110KΩ
V 6	6AT6	10 Meg.	0Ω	0Ω	.2Ω	470KΩ	650KΩ	*220KΩ	
V 7	6V6GT	0Ω	0Ω	*700Ω	*1100Ω	550KΩ	100KΩ	.2Ω	400Ω
V 8	‡Y63T	Ω	8 Meg.	Inf.	100Ω	Inf.	110Ω	Inf.	8 Meg.

*Measured From Pin 8 Of V8.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning cap. fully closed and set pointer to last calibration mark at left end of dial backplate. Calibration marks are as follows: Top Row (Left to Right) 87.5MC, 88MC, 100MC, 103MC, 108.5MC, Bottom Row-600KC, 900KC, and 1500KC.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) 6BE6 (V2). Low side to chassis.	455KC	AM (center)	Mid-scale	Across voice coil	A1,A2, A3	Adjust for maximum output.
2.		Loop	1500KC	"	"	"	A4,A5	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust of maximum output.
3.		Loop	1000KC	"	"	"		Spread or compress the plates of the RF section of tuning gang.
4.		Loop	600KC	"	"	"		"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Before starting FM IF Alignment, short pin 6 of 6V6 (V4) to chassis. (This point is only a junction terminal for AVC line.)

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
5.	.1MFD	Across FM Ant. terminals.	10.7MC (Unmod.)	FM (Ext. counter-clock-wise)	Mid-scale	DC Probe to Point ◇A◇ Common to chassis.	A6,A7, A8,A9	Adjust for maximum deflection.
6.	.1MFD	"	"	"	"	DC Probe to Point ◇B◇ (High side of vol.cont.) Common to chassis.	A10	Adjust for zero reading. A positive and negative reading will be obtained on either side of correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	BAND SWITCH POS.	CONNECT SCOPE	ADJUST	REMARKS
5.	5000MMF	High side to pin 7 (Grid) 6BE6 (V2). Low side to chassis.	10.7MC (450KC Sweep)	10.7MC	FM	Vert. Amp. to Point ◇C◇ Low side to chassis.	A6,A7, A8,A9	Disconnect stabilizer cap. (C2). Adjust A6, A7, A8 and A9 for maximum amplitude and symmetry of pattern as per Fig 1.
6.	5000MMF	"	"	"	"	Vert. Amp. to Point ◇B◇ Low side to chassis.	A10	Reconnect stabilizer cap. (C2). Adjust A10 for correct crossover as per Fig 2. Slightly retouch A6 for maximum amplitude and straightness of crossover lines.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω carbon res.	Across FM Ant. terminals.	108.5MC (Unmod.)	FM (Ext. counter-clock-wise)	108.5MC	DC Probe to Point ◇A◇ Common to chassis.	A11	Adjust for maximum deflection.
8.	300Ω carbon res.	"	87.5MC (Unmod.)	"	87.5MC	"		Spread or compress FM Osc. coil turns for maximum deflection.
9.	300Ω carbon res.	"	103MC (Unmod.)	"	103MC	"	A12	Adjust for maximum deflection.
10.	300Ω carbon res.	"	100MC (Unmod.)	"	100MC	"	A13	"
11.	300Ω carbon res.	"	88MC (Unmod.)	"	88MC	"		Spread or compress FM RF coil turns for maximum deflection.

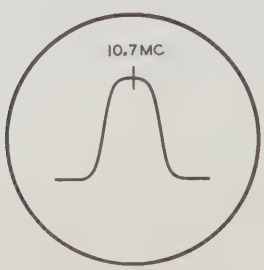

FIG. 1

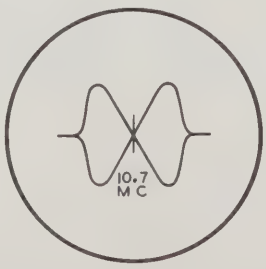

FIG. 2

ALTEC LANSING
MODEL A-323B

ALTEC LANSING
MODEL A-323B

ALTEC-LANSING MODEL A-323B

TRADE NAME	Altec-Lansing, Model A-323B
MANUFACTURER	Altec-Lansing Corp., 250 West 57th St., New York, New York
TYPE SET	AC Operated 2 Channel Audio Amplifier
TUBES(SIX)	Types 6J7 Phono Pre Amp., 6J7 AF Amp., 6J5 Phase-Inverter, (2) 6L6G Power Output, 5U4G Rectifier
POWER SUPPLY	110-125 Volts AC RATING: .87 Amp. @ 117 Volts AC

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DATE 7/49 4914-2 SET #66 FOLDER #2

PARTS LIST AND DESCRIPTIONS

ALTEC LANSING
MODEL A323B

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ALTEC-LANSING PART No.	STANDARD REPLACEMENT		
V1	Phono Pre Amp.	6J7	6J7	7R	
V2	AF Amp.	6J7	6J7	7R	
V3	Phase Inverter	6J5	6J5	6Q	
V4	Power Output	6L6G	6L6G	7AC	
V5	Power Output	6L6G	6L6G	7AC	
V6	Rectifier	5U4G	5U4G	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ALTEC-LANSING PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	40	500		AF88J	UP4445		DY-2x40	EL-240	●Filter
B	40	500					-450		▲Filter
C2A	20	450		AF44J	UP2245		DY-2x20	EL-220	■AF Decoupling
B	20	450					-450		▲Phono Pre Amp. Dec.
C3	50	50		PRS50/50	BR505		M-50-50	TA-550	Output Cath. Bypass
C4	50	25		PRS25/50	BR502		M-50-25	TA-50	AF Cath. Bypass
C5	50	25		PRS25/50	BR502		M-50-25	TA-50	Phono Pre Amp. Cath. Byp.
C6	4	350		PRS350/4	BR435		M-4-450	UT-43	Phono Pre Amp. Screen Byp.
C7	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Audio Coupling
C8	8000	300		1467-008	1D3D8	GP2-335-01	MW.3-28	1FM-28	Tone Compensation
C9	200	500		1469-0002	5R5T2	GP2K-200	MOS.5-32	MS-32	Tone Compensation
C10	500	500		1469-0005	5R5T5	GP2K-500	MOS.5-35	MS-35	Tone Compensation
C11	1000	500		1464-001	2R5D1	GP2L-001	MWS.5-21	MS-21	Tone Compensation
C12	200	500		1469-0002	5R5T2	GP2K-200	MOS.5-32	MS-32	Tone Compensation
C13	500	500		1469-0005	5R5T5	GP2K-500	MOS.5-35	MS-35	Tone Compensation
C14	1000	500		1464-001	2R5D1	GP2L-001	MWS.5-21	MS-21	Tone Compensation
C15	.1	600		P688-1	GT6P1		ST-6-1	TM-1	AF Screen Bypass
C16	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Audio Coupling
C17	.1	600		P688-1	GT6P1		ST-6-1	TM-1	Audio Coupling
C18	.1	600		P688-1	GT6P1		ST-6-1	TM-1	Audio Coupling
C19	.05	600		P688-05	GT6S5		ST-6-05	TM-15	AF Feedback
C20	.25	200		P488-25	GT2P25		ST-2-25	TC-2	Tone Compensation Note

Note Not Used In All Models.

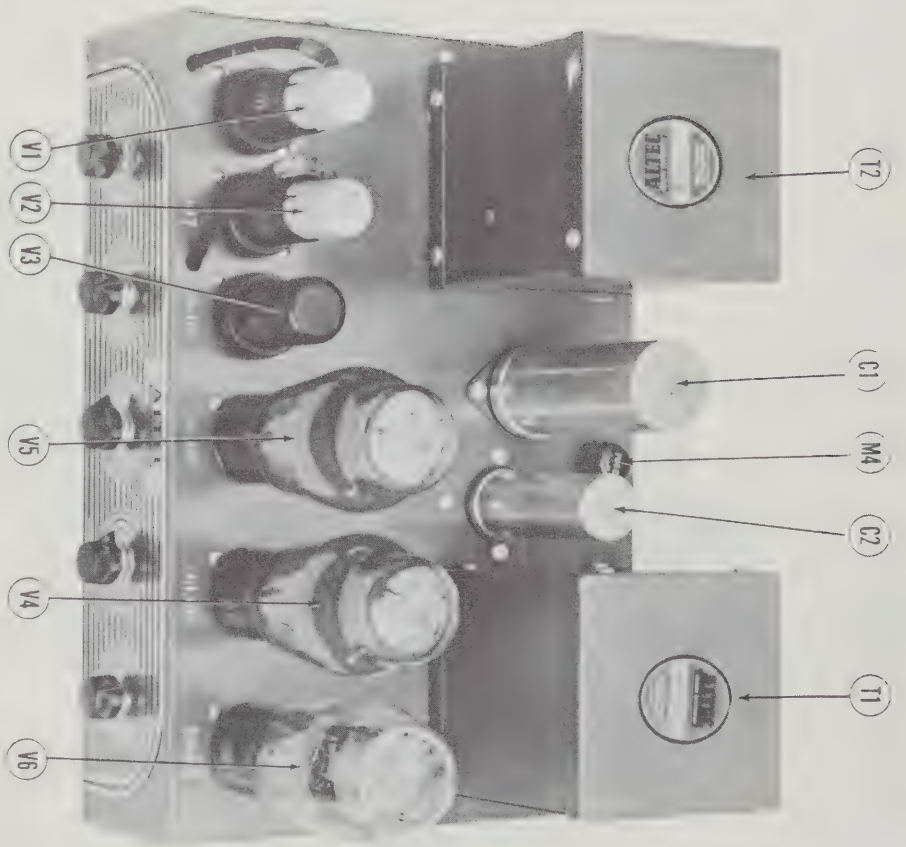
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	ALTEC-LANSING PART No.	IRC PART No.	CLAROSTAT PART No.	
R1	500KΩ	½		Q13-133	M-60-Z	Volume Control
R2	250KΩ	½		Q11-130	M-55-S	Bass Control
R3	50Ω	1		W-50	58-50	Hum Balance Control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ALTEC-LANSING PART No.	IRC PART No.	
R4	470KΩ	½		BTS-470K	Phono Pre Amp. Grid
R5	2200Ω	½		BTS-2200	Phono Pre Amp. Cathode
R6	1 Meg	½		BTS-1 Meg	Phono Pre Amp. Screen
R7	240KΩ	½		BTS-220K	Phono Pre Amp. Plate
R8	30KΩ	½		BTS-27K	Tone Compensation
R9	100KΩ	½		BTS-100K	Tone Compensation
R10	100KΩ	½		BTS-100K	Tone Compensation
R11	100Ω	½			Tone Compensation See Note
R12	8200Ω	½		BTS-8200	Tone Compensation
R13	1000Ω	½		BTS-1000	AF Cathode
R14	100Ω	½			AF Cathode
R15	1 Meg	½		BTS-1 Meg	AF Screen

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ALTEC LANSING PART No.	IRC PART No.	
R16	240KΩ	½		BTS-220K	AF Plate
R17	1 Meg	½		BTS-1 Meg	Phase Inv. Grid
R18	2200Ω	½		BTS-2200	Phase Inv. Cathode
R19	47KΩ	½		BTS-47K	Voltage Divider
R20	47KΩ	½		BTS-47K	Phase Inv. Plate
R21	240KΩ	½		BTS-220K	Output Grid
R22	240KΩ	½		BTS-220K	Output Grid
R23	250Ω	10		AB-250	Output Cathode
R24	250Ω	10		AB-250	Filter
R25	10KΩ	½		BTS-10K	Filter
R26	47KΩ	½		BTS-47K	Filter

Note Not Used In All Models.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ALTEC-LANSING PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .87A	700VCT @ .108A DC	5VAC @ 3A	6.3VAC @ 2.7A	TL-608	P-4080*	PCC-105*	P-3153*

*Drill New Mounting Holes.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ALTEC-LANSING PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	5300Ω CT	2.5 -5Ω 8-12Ω 16-24Ω	280Ω CT	.2Ω .8Ω 1Ω	TL-217B	A-8053*	PCO-80*	A-3130*	*Drill New Mounting Holes.

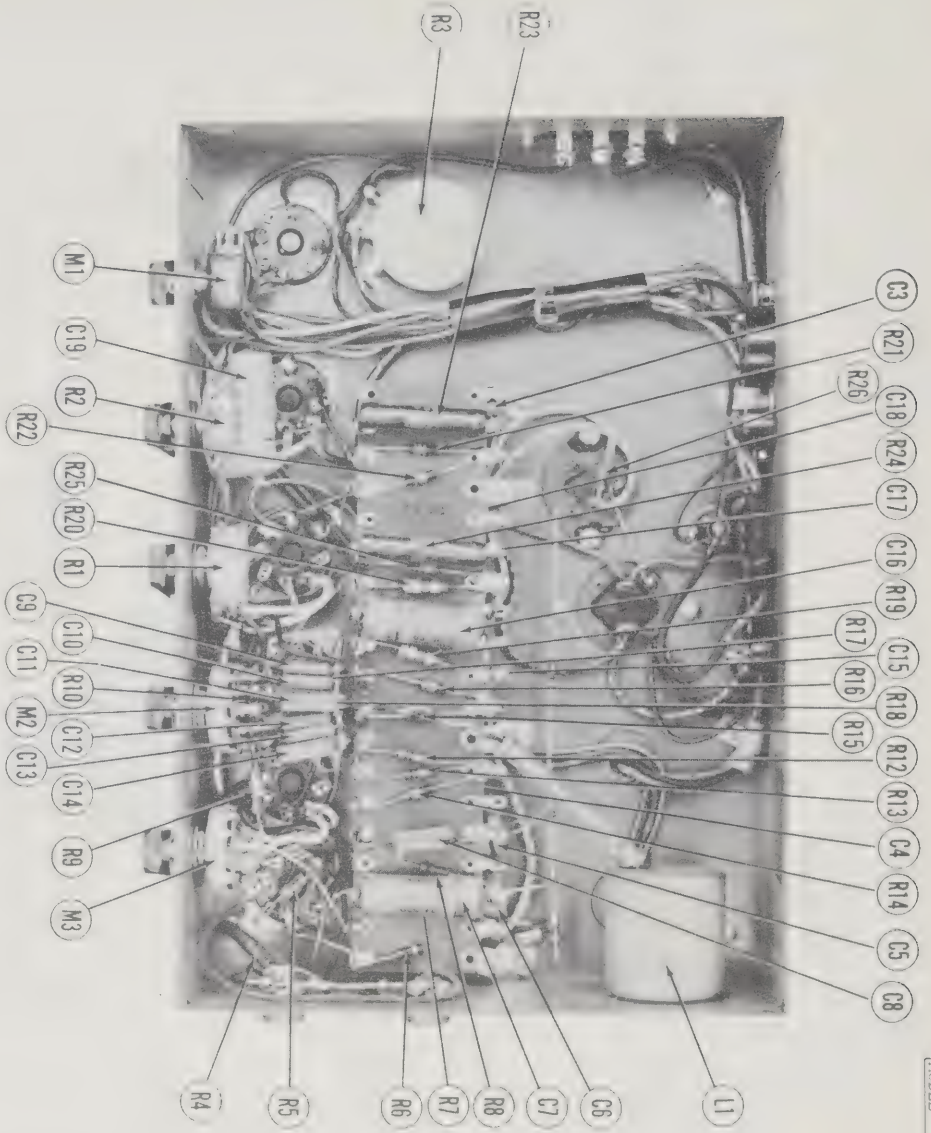
TONE CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	ALTEC-LANSING PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
L1		600Ω		TA-325				

MISCELLANEOUS

ITEM No.	PART NAME	ALTEC-LANSING PART No.	NOTES
M1	Switch		Power
M2	Switch		Treble
M3	Switch		Input Selector
M4	Fuse		1.5 Amp.

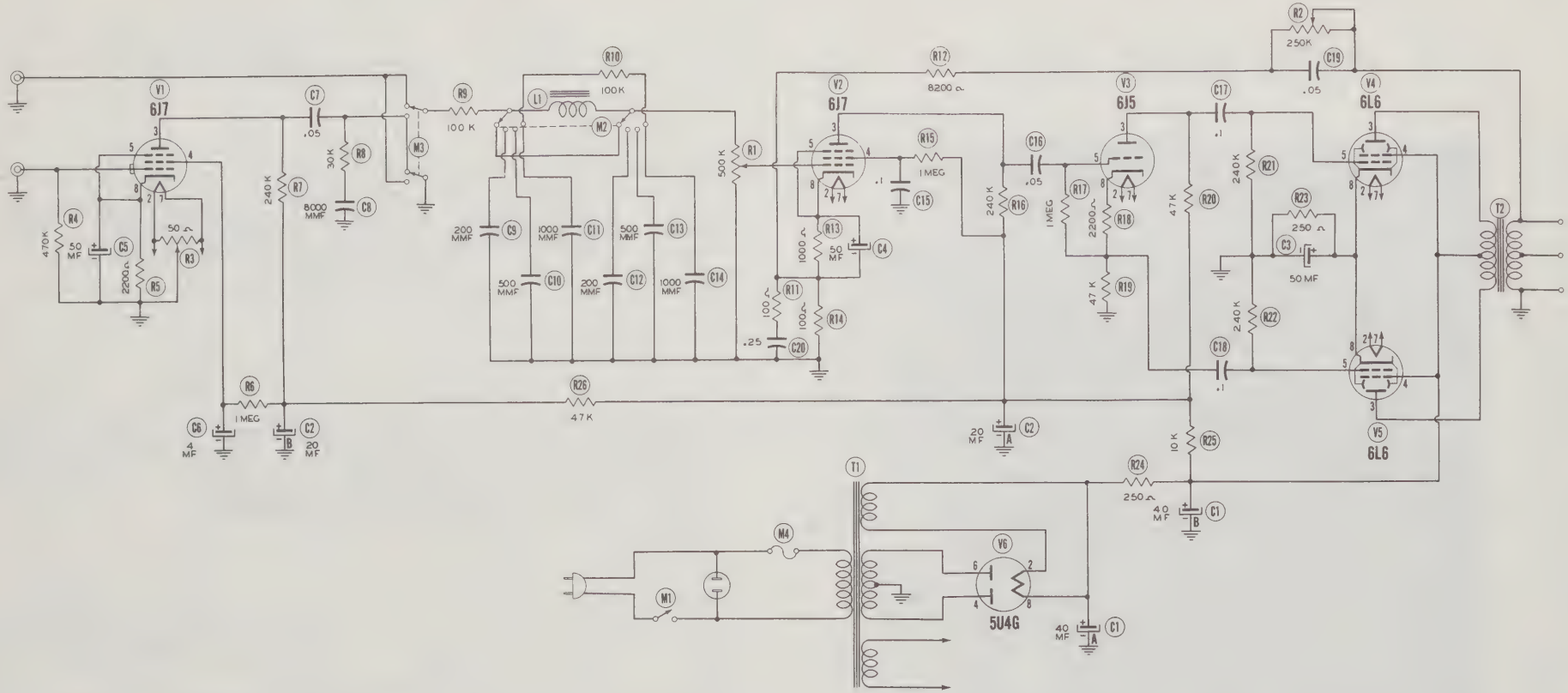
CHASSIS—BOTTOM VIEW



DATE 7/49 4914-2 SET #66 FOLDER #2

ALTEC LANSING
MODEL A323B

ALTEC LANSING
MODEL A323B



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J7	0V	0V	90VDC	55VDC	2.2VDC	0V	6.3VAC	2.2VDC	0V
V 2	6J7	0V	0V	95VDC	45VDC	1.3VDC	0V	6.3VAC	1.3VDC	0V
V 3	6J5	0V	0V	220VDC	0V	55VDC	95VDC	6.3VAC	100VDC	
V 4	6L6G	0V	0V	355VDC	360VDC	0V	0V	6.3VAC	27VDC	
V 5	6L6G	0V	0V	355VDC	360VDC	0V	0V	6.3VAC	27VDC	
V 6	5U4G	0V	390VDC	0V	350VAC	0V	350VAC	0V	390VDC	

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J7	0Ω	0Ω	*290KΩ	*750KΩ	2.2KΩ	Inf.	.2Ω	2.2KΩ	470KΩ
V 2	6J7	0Ω	0Ω	*240KΩ	1 Meg.	1000Ω	Inf.	.2Ω	1000Ω	470KΩ
V 3	6J5	0Ω	0Ω	*58KΩ	Inf.	1 Meg.	47KΩ	.2Ω	48KΩ	
V 4	6L6G	Inf.	0Ω	*380Ω	*250Ω	240KΩ	Inf.	.2Ω	250Ω	
V 5	6L6G	Inf.	0Ω	*380Ω	*250Ω	240KΩ	Inf.	.2Ω	250Ω	
V 6	5U4G	Inf.	130KΩ	Inf.	130Ω	Inf.	125Ω	Inf.	130KΩ	

*Measured From Pin 8 Of V6.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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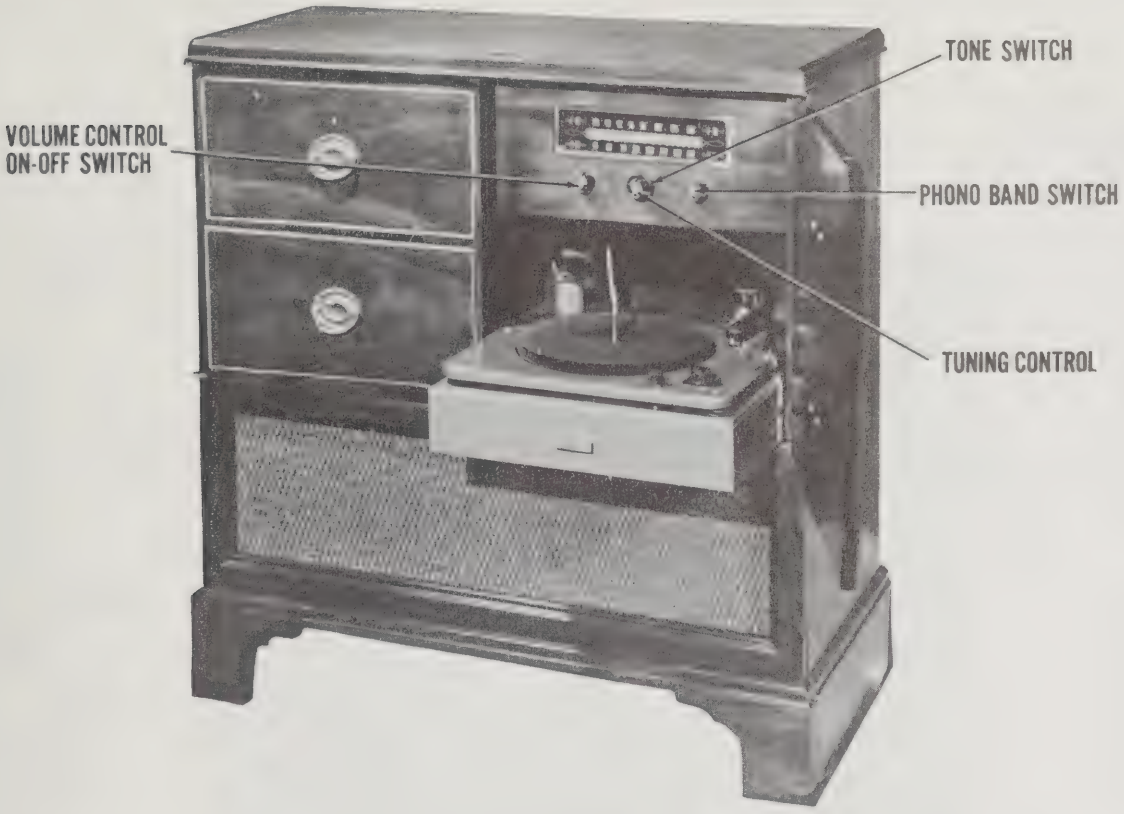
4914-2

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

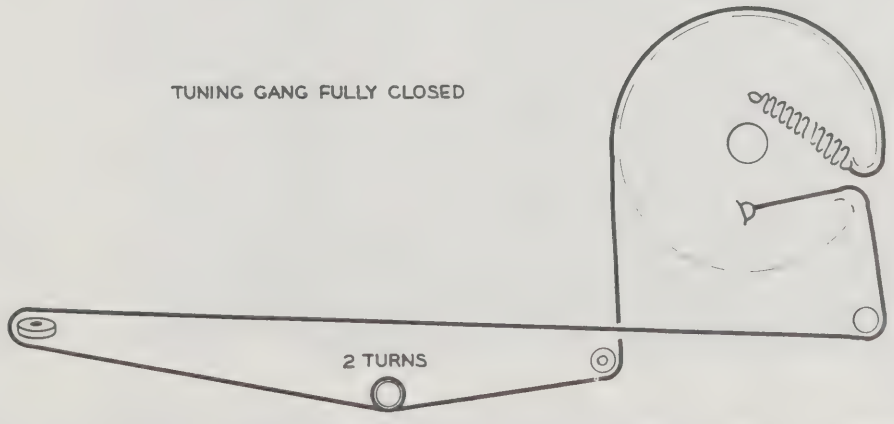


BENDIX
MODEL 79M7

BENDIX
MODEL 79M7

BENDIX MODEL 79M7

TRADE NAME	Bendix, Model 79M7		
MANUFACTURER	Bendix Radio, Div. of Bendix Aviation Corp., Baltimore, Maryland		
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna.		
TUBES(SEVEN)	Types 6BA6 FM RF Amp., 12AT7 Converter, 6BA6 1st IF Amp., 6BA6 2nd IF Amp., 6T8 DET-AVC-AF, 6V6GT Power Output, 5Y3GT Rectifier.		
POWER SUPPLY	105-120 Volts AC	RATING:	.58 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620KC	FREQ. MOD.	88-108MC



DIAL CORD DRIVE

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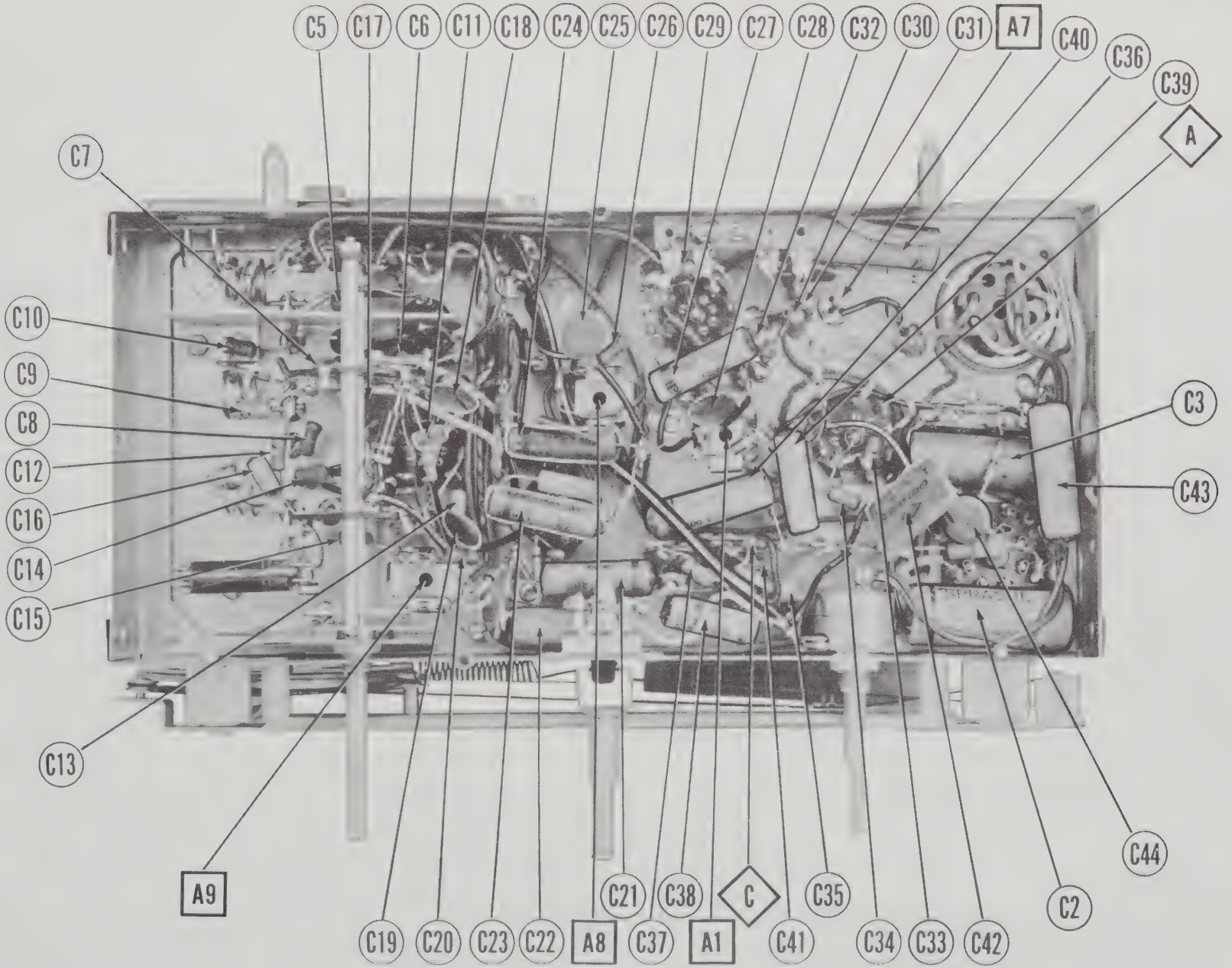
DATE 7/49 4914-3 SET #66 FOLDER #3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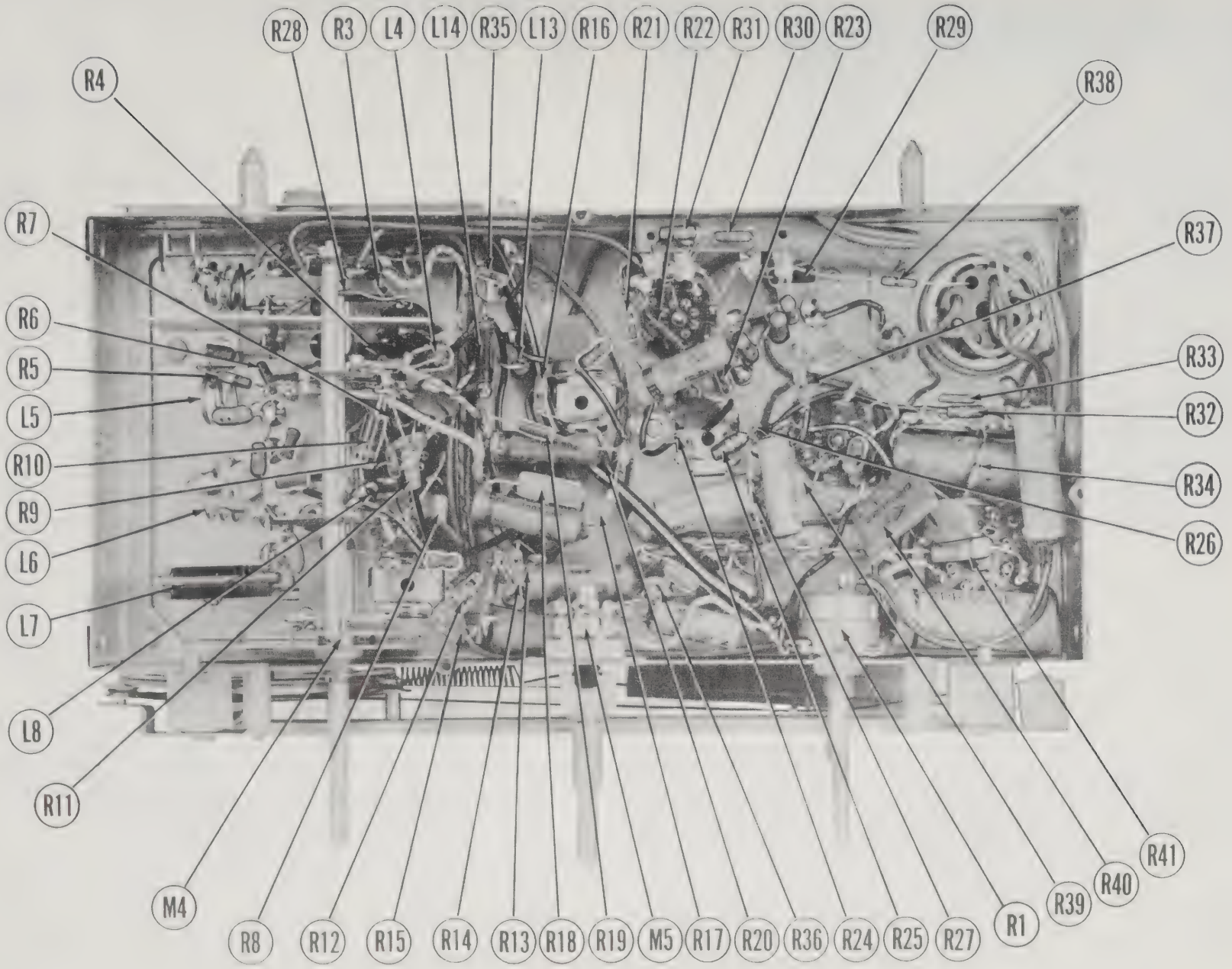
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R18
R19
M5
R17
R20
R36
R24
R25
R27
R1
R39
R40
R41

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amp.	6BA6	6BA6	7BK	
V2	Converter	12AT7	12AT7	7BT	
V3	1st IF Amp.	6BA6	6BA6	7BK	
V4	2nd IF Amp.	6BA6	6BA6	7BK	
V5	DET-AVC-AF	6T8	6T8		
V6	Power Output	6V6GT	6V6GT	7AC	
V7	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: BENDIX PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	20	450	CE3A03	AF4444J*	UP2222		DY-4x20	EL-420*	▲Filter
B	20	450			45*		-450*		■Filter
C	40	450							▲Filter
C2	20	25	CE1T02	PRS25/25	BR202A		M-25-25	TA-25	Output Cath. Bypass
C3	5	50	CE1T06	PRS150/4	BR550		M-4-150	TA-55	Stabilizing Cap
C4	4.7		CC0A18	1468-000005	5W5V5	NP0K-5	MO.5-55	MS-55	Ext. Ant. Coupling
C5	220		CC9A38	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	RF Coupling
C6	1000		CC9M50	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Screen Bypass
C7	22		CC0A26	1468-000025	5W5Q2	GP1K-25	MO.5-425	MS-42	RF Coupling
C8	470		CC9M42	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Coupling
C9	1000		CC9M50	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Coupling
C10	1000		CC9M50	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AVC Filter
C11	1000	500	CM5A46	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Conv. Cath. Bypass
C12	2.2		CC0A14			NP0K-3			Osc. Coupling
C13	47		CC8B30	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C14	15		CC0A24			GP1K-15		MS-415	Osc. Feedback
C15	220		CC9A38	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Osc. Feedback
C16	12		CC8B23						Fixed Trimmer
C17	4.7		CC0A18	1469-000005	5R5V5	NP0K-5	MOS.5-55	MS-55	Fixed Trimmer
C18	5000		CC0M00	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Decoupling
C19	5000		CC0M00	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Plate Decoup.
C20	470		CC9M42	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	IF Coupling
C21	.03	400	CP4T36	P488-03	GT4S3		ST-6-03	TM-13	AVC Filter
C22	.03	400	CP4T36	P488-03	GT4S3		ST-6-03	TM-13	AVC Filter
C23	.006	600	CP6T20	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	1st IF Screen Bypass
C24	.006	600	CP6T20	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	1st IF Plate Decoup.
C25	5000		CC0M00	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C26	470		CC9M42	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	IF Coupling
C27	.006	600	CP6T20	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	2nd IF Screen Bypass
C28	5000		CC0M00	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Decoupling
C29	100		CC9A34	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	2nd IF Fil. Bypass
C30	100		CC9A34	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Load Cap
C31	100		CC9A34	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Load Cap
C32	1000		CC9M50	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	De-emphasis
C33	1000		CC9M50	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Bypass
C34	100		CC9A34	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Det.-AF Fil. Bypass
C35	.006	600	CP6T20	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	Audio Coupling
C36	.03	400	CP4T36	P488-03	GT4S3		ST-6-03	TM-13	Audio Coupling
C37	100		CC9A34	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
C38	.002	600	CP6T12	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Tone Compensation
C39	.004	400	CP3S16	P688-004	GT6D4		ST-6-004	TM-24	Tone Compensation
C40	.1	200	CPT251	P288-1	GT2P1		ST-2-1	TM-1	Bias Filter
C41	47	500	CM5A14	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Bypass
C42A	250		Note 1	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass
B	5000		Note 1	P688-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Audio Coupling
C43	.03	400	CP4T36	P488-03	GT4S3		ST-6-03	TM-13	Output Cath. Bypass
C44	5000		CC0M00	P688-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Output Plate Bypass
C45	5600	500	CP9S31	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	Line Filter Note 2
C46	5600	500	CP9S31	P688-006	GT6D6	GP2-335 -0075	ST-6-006	TM-26	Line Filter Note 2

*Parallel Sections To Obtain Desired Capacity.
Note 1. Items C42A, C42B, R40A, and R40B Are Combined Into One Unit, and Are Obtainable Under Mfgr's Part No. AC0C01.
Note 2. Some Models Use .01MFD In This Application.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
T2	7000Ω	3.3Ω	480Ω	.56Ω	TA0021	A-3850	RO-9‡	A-2903	‡Drill New Mtg. Hole

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	INSTALLATION NOTES
SP1	FIELD	V.C. IMP.	SP0R01	ST-119‡ MOD.P10-T	10A31	‡Replace Output XFMR To Match 6-8Ω Voice Coil
	PM	3.3Ω				
	CONE DIA.	V.C. DIA.				
SP2	9-1/4"	9-5/8"				

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: MEISSNER PART No.
L1	AM Loop Ant	1.5Ω		AL0Z15	
L2	FM Dipole Ant.	0Ω			
L3	FM Ant.Coil	0Ω	0Ω	LA0F01	
L4	RF Choke	0Ω		LF0A01	
L5	FM RF Coil	0Ω		LI0F01	
L6	FM Osc.Coil	0Ω		LO7F00	
L7	AM Osc.Coil	12Ω		LO7B00	14-1060
L8	RF Choke	0Ω		LF0A08	
L9A	FM 1st IF	1Ω		TI0C12	
B	AM 1st IF	8.5Ω			
L10A	FM 2nd IF	1.5Ω		TI0D20	
B	AM 2nd IF	8.5Ω			
L11	Ratio Det.	1Ω	0Ω	TR0R00	
L12	AM 3rd IF	9Ω	9Ω	TI0D23	
L13	Fil.Choke	0Ω		LF0A00	
L14	Fil.Choke	0Ω		LF0A00	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.25A	Blue	#44		Type #44
M2	Bayonet	6-8V	0.25A	Blue	#44		Type #44

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA: BENDIX PART No.	REPLACEMENT DATA: ASTATIC PART No.	REMARKS
M3		LQD-1J	

MISCELLANEOUS

ITEM No.	PART NAME	BENDIX PART No.	NOTES
M4	Switch	SR3F00	Band
M5	Switch	SS1C02	Tone
M6	2 Gang Var. Cap.	CV0D01	(15-517MMF, 40-217MMF)
A5	Trimmer	CT1A20	BC Osc. Adj.
A11	Trimmer	CT1B05	FM Osc. Adj.
	Dial Scale	DS0C16	Glass
	Dial Pointer	ID0M21	With Carriage
	Knob	KC0B16	
	Knob	KY0B02	Concentric
	Cabinet	ZW7G11	

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	BENDIX PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	2 Meg	½	RV4S13	Q18-139X	T-116	Volume Control Tapped @ 1 Meg
B	Switch		Not Req.	76-1	SW-A	Attach To R1A Per Instructions

RESISTORS

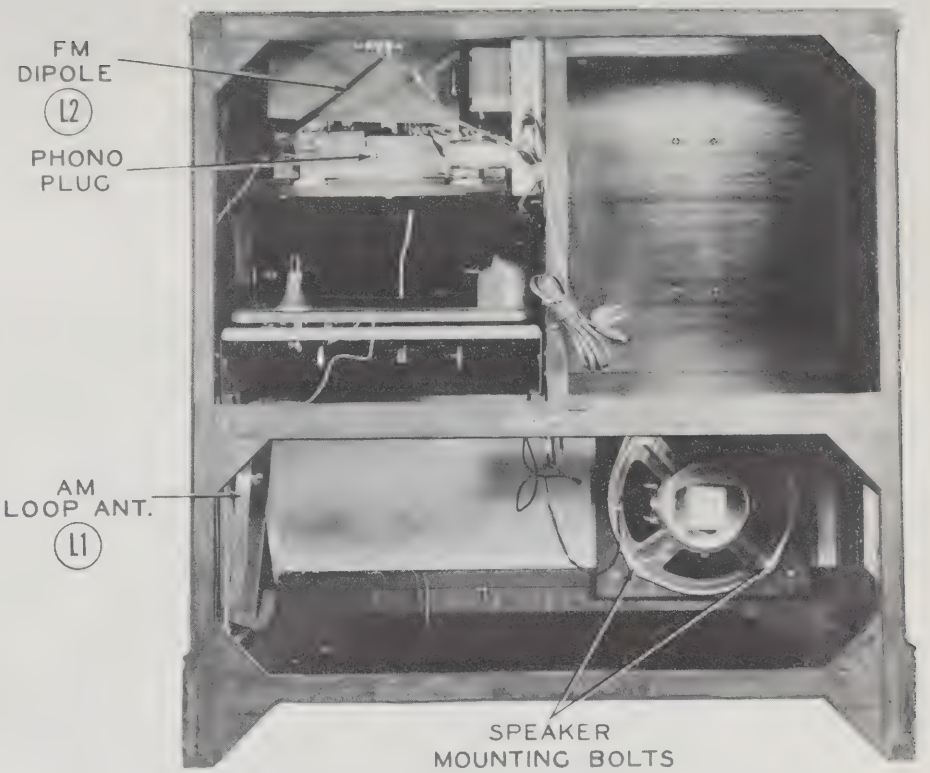
ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	BENDIX PART No.	IRC PART No.	
R2	1000Ω	½	RC22A102M	BTS-1000	External Ant. Coupling
R3	100KΩ	½	RC22A104M	BTS-100K	FM RF Grid
R4	47KΩ	½	RC22A473M	BTS-47K	FM RF Screen Decoupling
R5	100KΩ	½	RC22A104M	BTS-100K	FM Mixer Grid
R6	2.2 Meg	½	RM2F66	BTS-2.2 Meg	AM Mixer Grid
R7	3300Ω	½	RC23A332M	BTS-3300	Mixer Cathode
R8	22KΩ	½	RC22A223M	BTS-22K	Osc. Grid
R9	150KΩ	½	RC22A154M	BTS-150K	Osc. Plate
R10	4700Ω	1	RC24A472M	BTA-4700	Osc. Plate
R11	47KΩ	½	RC22A473M	BTS-47K	Mixer Plate Decoupling
R12	1000Ω	½	RC22A102M	BTS-1000	AVC Network
R13	1 Meg	½	RC22A105M	BTS-1 Meg	AVC Network
R14	1 Meg	½	RC22A105M	BTS-1 Meg	AVC Network
R15	1000Ω	½	RC22A102M	BTS-1000	AVC Network
R16	100KΩ	½	RC22A104M	BTS-100K	1st IF Coil Shunt
R17	470KΩ	½	RC22A474M	BTS-470K	1st IF Screen Decoupling
R18	33KΩ	1	RC24A333M	BTA-33K	1st IF Screen Dropping
R19	220Ω	½	RC22A221M	BW-½-220	Decoupling
R20	1000Ω	½	RC22A102M	BTS-1000	1st IF Plate Decoupling
R21	470KΩ	½	RC22A474M	BTS-470K	2nd IF Grid
R22	150Ω	½	RC22A151M	BW-½-150	2nd IF Cathode
R23	47KΩ	½	RC22A473M	BTS-47K	2nd IF Screen Decoupling
R24	1000Ω	½	RC22A102M	BTS-1000	2nd IF Plate Decoupling
R25	47KΩ	½	RC22A473M	BTS-47K	Diode Filter
R26	220KΩ	½	RC22A224M	BTS-220K	Diode Load
R27	1000Ω	½	RC22A102M	BTS-1000	AVC Network
R28	1 Meg	½	RC22A105M	BTS-1 Meg	AVC Network
R29	33Ω	½	RC22A330M		Balancing
R30	33KΩ	½	RC24A333M	BTS-33K	De-emphasis
R31	1000Ω	½	RC22A102M	BTS-1000	De-emphasis
R32	15KΩ	½	RC22A153M	BTS-15K	Ratio Detector Diode Load
R33	470KΩ	½	RC22A474M	BTS-470K	AVC Network
R34	10 Meg	½	RC22A106M	BTS-10 Meg	Delayed AVC Network
R35	1 Meg	½	RC22A105M	BTS-1 Meg	Series Phono
R36	100KΩ	½	RC22A104M	BTS-100K	Tone Compensation
R37	10 Meg	½	RC22A106M	BTS-10 Meg	AF Grid
R38	10 Meg	½	RC22A106M	BTS-10 Meg	Bias Net
R39	10 Meg	½	RC22A106M	BTS-10 Meg	Tone Compensation
R40A	250KΩ	½	See Note 1	BTS-220K	AF Plate
B	500KΩ	½	See Note 1	BTS-470K	Output Grid
R41	330Ω	1	RC24A331M	BTA-330	Output Cathode
R42A	220Ω	½		BW-½-220	Filter
B	1500Ω	½		BTS-1500	Filter
R43	15Ω	½	RC23A150M	BW-½-15	Bias Network See Note 2

Note 1. Items C42A, C42B, R40A and R40B Are Combined Into One Unit, and Are Obtainable Under Mfgr s Part No. AC0C01.
Note 2. Some Models Use Two 33Ω Resistors In Parallel In This Application.

TRANSFORMER (POWER)

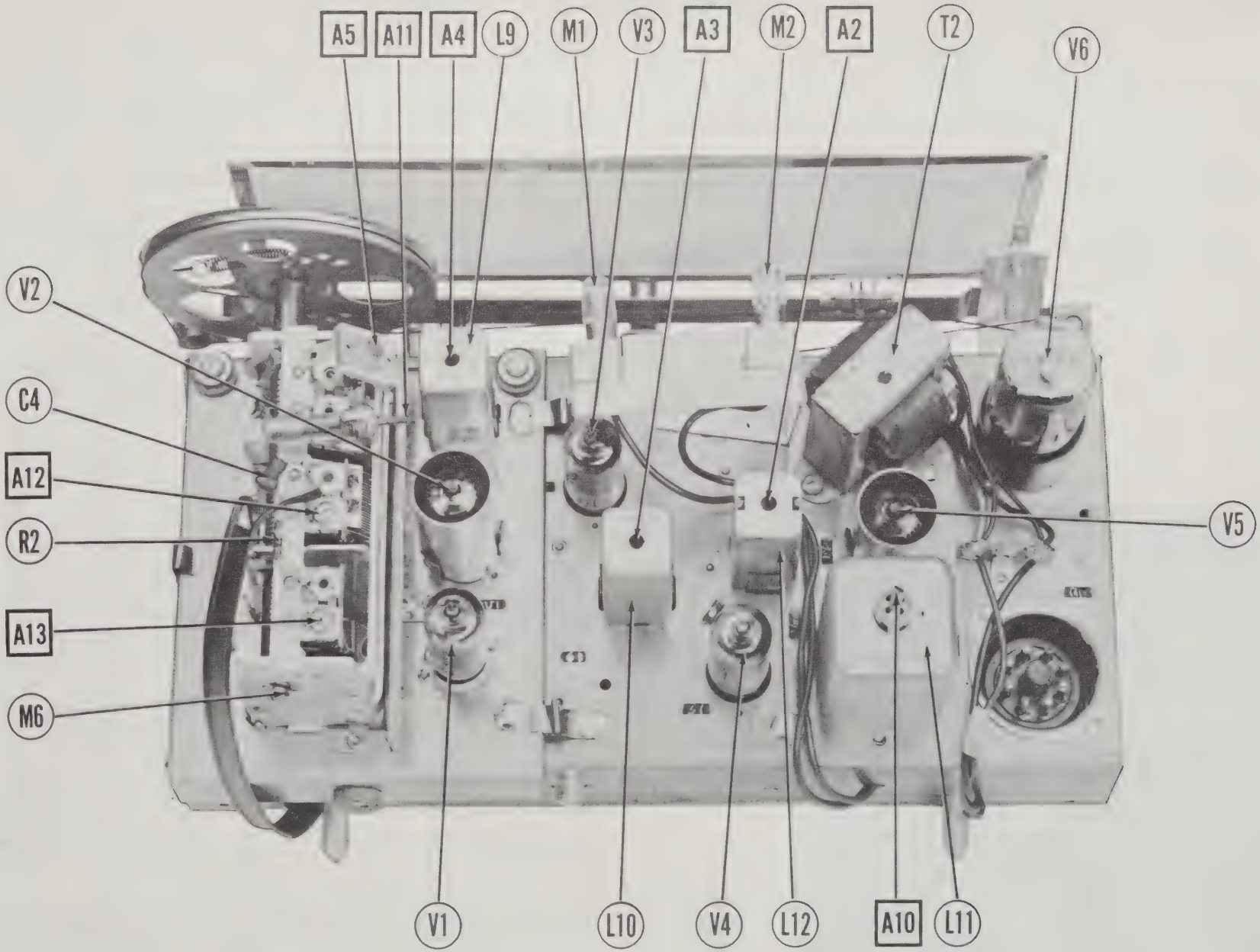
ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	BENDIX PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .58A	660VCT .063A DC	5VAC @ 2A	6.4VAC @ 2.6A	TP0H02	P-6012‡#	PH-70B‡	P-2952‡#

‡Drill New Mtg. Holes.
#Add Series Resistor To Reduce Plate Voltage.



DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove screws holding back cover. Remove back cover.
3. Disconnect phono motor plug and speaker solderless connectors. Remove phono pickup plug from rear of chassis.
4. Remove FM antenna plug from rear of chassis and disconnect AM antenna leads from loop.
5. Remove power plug from tuner chassis.
6. Remove four screws holding power supply chassis. NOTE: DO NOT REMOVE NUTS. REMOVE SCREWS FROM INSIDE CHANGER COMPARTMENT.
7. Remove three 1/4" hex head screws from underneath chassis.
8. Remove four screws holding mounting brackets at rear of chassis. Remove chassis.
9. Remove four 11/32" hex head nuts holding speaker. Remove speaker.


A5
A11
A4
L9
M1
V3
A3
M2
A2
T2
V6
V2
C4
A12
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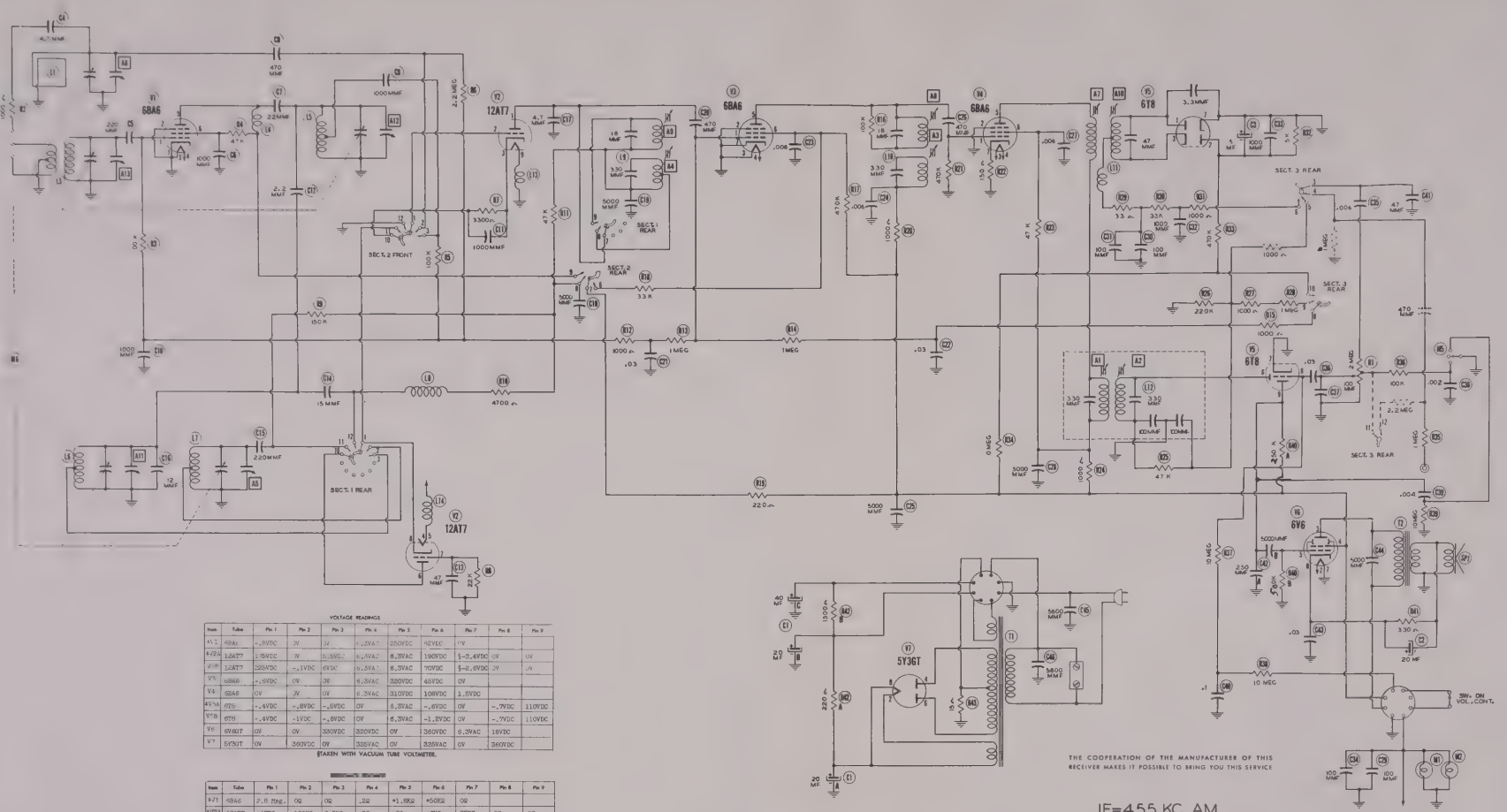
A13
M6
V5
V1
L10
V4
L12
A10
L11



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	-.8VDC	0V	0V	-.8VAC	250VDC	62VDC	0V		
V2A	12AT7	1.75VDC	0V	15.5VDC	6.3VAC	6.3VAC	190VDC	-2.4VDC	0V	0V
V2B	12AT7	255VDC	-.1VDC	6VDC	6.3VAC	6.3VAC	70VDC	-2.6VDC	0V	0V
V3	6BA6	-.9VDC	0V	0V	6.3VAC	320VDC	45VDC	0V		
V4	6BA6	0V	0V	0V	6.3VAC	310VDC	108VDC	1.5VDC		
V5A	6T8	-.4VDC	-.8VDC	-.6VDC	0V	6.3VAC	-.6VDC	0V	-.7VDC	110VDC
V5B	6T8	-.4VDC	-1VDC	-.6VDC	0V	6.3VAC	-1.8VDC	0V	-.7VDC	110VDC
V6	6V6GT	0V	0V	330VDC	330VDC	0V	360VDC	6.3VAC	18VDC	
V7	5Y3GT	0V	360VDC	0V	335VAC	0V	335VAC	0V	360VDC	

TAKEN WITH VACUUM TUBE VOLTMETER.

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V1	6BA6	2.8 Meg.	0Ω	0Ω	.2Ω	.2Ω	*1.6KΩ	*50KΩ	0Ω	
V2A	12AT7	*47KΩ	100KΩ	3.3KΩ	.2Ω	.2Ω	*6KΩ	22KΩ	0Ω	0Ω
V2B	12AT7	*47KΩ	5 Meg.	3.3KΩ	.2Ω	.2Ω	*170KΩ	22KΩ	1.5Ω	0Ω
V3	6BA6	2.5 Meg.	0Ω	0Ω	.2Ω	.2Ω	*2.7KΩ	*470KΩ	0Ω	
V4	6BA6	470KΩ	0Ω	0Ω	.2Ω	.2Ω	*2.5KΩ	*60KΩ	150Ω	
V5A	6T8	Inf.	15KΩ	Inf.	0Ω	.2Ω	300KΩ	0Ω	15 Meg.	*250KΩ
V5B	6T8	Inf.	15KΩ	Inf.	0Ω	.2Ω	300KΩ	0Ω	15 Meg.	*250KΩ
V6	6V6GT	0Ω	0Ω	*600Ω	*1700Ω	500KΩ	80KΩ	.2Ω	400Ω	
V7	5Y3GT	Inf.	80KΩ	Inf.	110Ω	Inf.	120Ω	Inf.	80KΩ	

* VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.
*Measured From Pin 8 Of V7.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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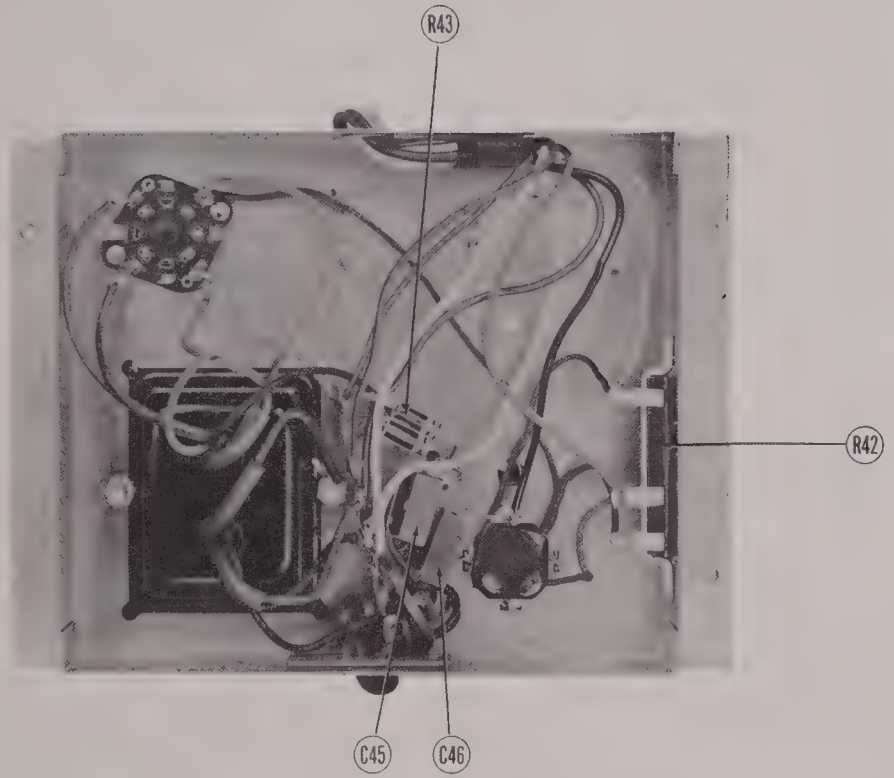
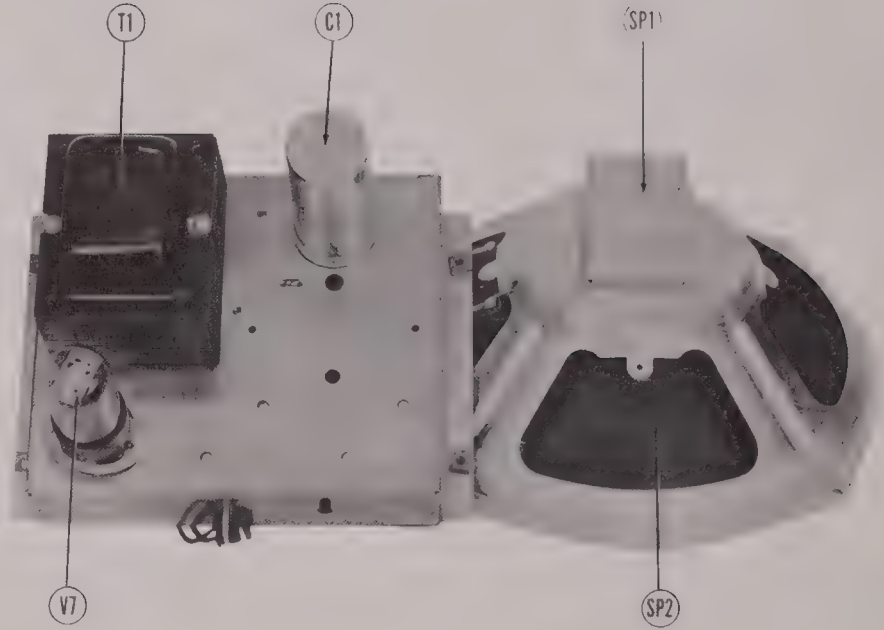

R43
R42
C45
C46


T1
C1
SP1
V7
SP2

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer, fully close the tuning capacitor and set pointer at extreme left-hand reference mark on dial backplate.

Calibration marks on bottom edge of dial backplate are as follows: (Top Row-Left to Right Extreme left hand limit, 580KC, 965KC, 1475KC. (Bottom Row-Left to Right) Left hand reference, 90MC, 97MC, and 106MC.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01 MFD	High side to pin 2 12AT7 (V2). Low side to chassis.	455KC	AM (Center Position)	Tuning cap fully open	Across Voice Coil	A1, A2 A3, A4	Short A5 to chassis. Adjust A1, A2, A3, and A4 for maximum output.
2.	100 MMF	"	1475KC	"	1475KC Calibration Mark	"	A5	Remove short. Adjust for maximum output.
3.	100MMF	High side Ext. AM Antenna lead. Low side to chassis.	1400KC	"	Tune for maximum output.	"	A6	Adjust for maximum output. Check calibratio. at 580KC and 965 KC.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Before starting step 5, connect two matched 100KΩ (±5%) resistors connected in series from pin 7 of 6T8 (V5) to chassis. Connect the common lead of the VTVM to the junction of these two resistors (point B) and the DC probe to point Ⓐ (see schematic).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01 MFD	High side to pin 2 12AT7 (V2). Low side to chassis.	10.7MC (Mod @ 400\)	FM (fully clockwise)	Set at point of non-interference)	DC Probe at Point Ⓐ Common lead to chassis.	A7,A8 A9	Short A11 to chassis. Adjust for maximum output.
5.	.01 MFD	"	"	"	"	See Prealignment Instructions.	A10	Adjust for zero reading. A positive and negative reading are on either side of correct setting. After adjusting remove two 100KΩ resistors and short across A11.

Repeat steps 4 and 5 until adjustments of A7, A8, and A9 are not required to obtain the zero reading in step 5.

If visual alignment check is not desired, continue with step 7.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60\ modulation and 450KC sweep. Use 120\ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	SCOPE CONNECT	ADJUST	REMARKS
4.	.01 MFD	High side to pin 1 6BA6 (V3). Low side to chassis.	10.7MC	FM	Set at point of non-interference	Vert. Amp to point Ⓐ Low side to chassis.	A7,A8	Disconnect stabilizer cap. Adjust for maximum amplitude and symmetry as per fig 1.
5.	.01MFD	High side to pin 2 12AT7 (V2). Low side to chassis.	"	"	"	"	A9	Adjust for maximum amplitude and symmetry as per fig 1.
6.	.01 MFD	"	"	"	"	Vert. Amp to point Ⓐ Low side to chassis.	A10	Reconnect stabilizer cap. Adjust for maximum straightness of crossover line with crossover point occurring at center of pattern as per fig 2.

FM OSCILLATOR & RF AMP ALIGNMENT

In step 7, it is possible to adjust the oscillator on low frequency side of the incoming signal which is not correct. With receiver set at 106MC., turn signal generator to 84.6MC. If oscillator is operating on correct side of the signal a beat note will not be heard. If note is heard, it will be necessary to readjust A11 so oscillator operates on the other side of the incoming signal.

If calibration is not correct, the inductance of the FM Oscillator coil must be adjusted. If dial pointer is on low frequency side, the coil inductance is too low and the coil turns must be expanded slightly. Repeat step 7 until correct calibration is obtained.

To correctly adjust the inductance of the RF Coil, leave VTVM connected between Point Ⓐ and chassis. and tune receiver to 90MC. Insert iron core end of a tuning wand into the RF Coil. If reading on VTVM increases, the coil inductance is too low and the coil turns must be compressed slightly. If reading decreases, insert brass slug end of tuning wand. If reading increases the coil turns must be expanded slightly. Correct adjustment is obtained when insertion of either end of tuning wand causes the reading to decrease. Adjust the antenna coil in same manner.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	See Fig 3.	Across FM Ant. terminal.	106MC	FM	106MC Calibration Mark.	DC Probe to point Ⓐ Common lead to chassis.	A11, A12, A13	Adjust for maximum output.

Check calibration at 97MC and 90MC.

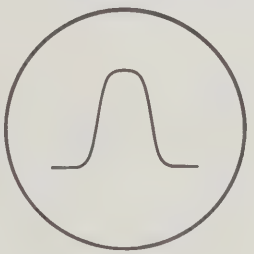


FIG. 1

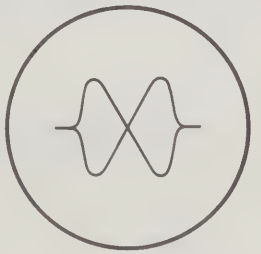


FIG. 2

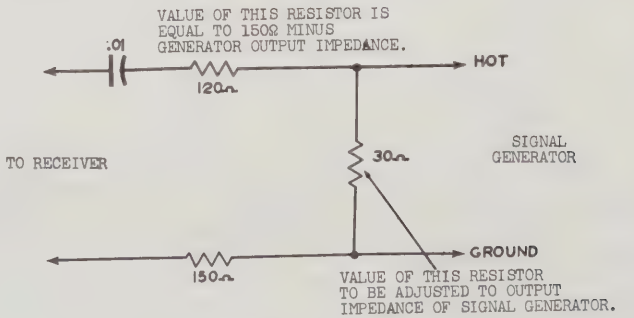


FIG. 3

CHALLENGER
MODEL CC618

CHALLENGER MODEL CC618

TRADE NAME	Challenger, Model CC618
MANUFACTURER	Challenger Amplifier Corp., 663 Broadway, New York 12, N.Y.
TYPE SET	AC or Battery Operated Audio Amplifier.
TUBES (SIX)	Types 6SF5 MIC Pre Amp., 6SF5 1st AF Amp., 6SL7GT AF-Phase Inverter, (2) 6V6GT Power Output, 7Z4 Rectifier.
POWER SUPPLY	110-120 Volts AC or 6 Volt Storage Battery RATING .67 Amp. @ 117 Volts AC or 14 Amps. @ 6 Volts DC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0V	0V	-.5VDC	0V	85VDC	145VDC	‡22VAC	‡22VAC
V 2	6SF5	0V	0V	0V	0V	150VDC	215VDC	‡22VAC	‡22VAC
V 3	6SL7GT	0V	185VDC	2VDC	0V	180VDC	2VDC	‡22VAC	‡22VAC
V 4	6V6GT	0V	‡22VAC	420VDC	320VDC	0V	0V	‡22VAC	22VDC
V 5	6V6GT	0V	‡22VAC	420VDC	320VDC	0V	420VDC	‡22VAC	22VDC
V 6	7Z4	‡22VAC	400VAC	400VAC	0V	420VDC	400VAC	450VDC	‡22VAC

‡6.3VAC Measured Between Lugs On Each Socket.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6SF5	0Ω	0Ω	1 Meg.	0Ω	*230KΩ	*150KΩ	2.5KΩ	2.5KΩ
V 2	6SF5	0Ω	0Ω	1.2 Meg.	0Ω	*180KΩ	*80KΩ	2.5KΩ	2.5KΩ
V 3	6SL7GT	520KΩ	*140KΩ	2KΩ	8KΩ	*140KΩ	2KΩ	2.5KΩ	2.5KΩ
V 4	6V6GT	Inf.	2.5KΩ	*420Ω	15KΩ	110KΩ	110KΩ	2.5KΩ	270Ω
V 5	6V6GT	Inf.	2.5KΩ	400Ω	15KΩ	110KΩ	65KΩ	2.5KΩ	270Ω
V 6	7Z4	2.5KΩ	2.5KΩ	140Ω	Inf.	120KΩ	140Ω	120KΩ	2.5KΩ

*Measured From Pin 7 Of V6.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

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PARTS LIST AND DESCRIPTIONS

CHALLENGER
MODEL CC618

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		CHALLENGER PART No.	STANDARD REPLACEMENT		
V1	MIC Pre Amp.	6SF5	6SF5	6AB	
V2	1st AF Amp.	6SF5	6SF5	6AB	
V3	2nd AF-Phase Inverter	6SL7GT	6SL7GT	8BD	
V4	Power Output	6V6GT	6V6GT	7AC	
V5	Power Output	6V6GT	6V6GT	7AC	
V6	Rectifier	7Z4	7Z4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	CHALLENGER PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	8	500		PRVC475/8-8	EB10018			CL-88	Filter - Red and Black
B	8	500							Filter - Blue and Yellow
C2A	5	450		AF2222J	UP111145		DY-4x10-450	EL-410	2nd AF-Phase Inv. Dec.
B	5	450							Output Screen Bypass
C	5	450							1st AF Decoupling
D	5	450							MIC Pre Amp. Decoupling
C3	50	50		PRS50/50	BR505		M-50-50	TA-550	Output Cath. Bypass
C4	100	25		PRS25/100	BRH251A		M-100-25	UHC-102	Filament Bypass
C5	100	25		PRS25/100	BRH251A		M-100-25	UHC-102	Filament Bypass
C6	.03	400		P488-03	GT4S3		ST-6-03	TM-13	Audio Coupling
C7	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C8	.03	400		P488-03	GT4S3		ST-6-03	TM-13	Audio Coupling
C9	500	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Tone Compensation
C10	.003	600		P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Compensation
C11	.003	600		P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Compensation
C12	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	1st AF Cath. Bypass
C13	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Audio Coupling
C14	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Audio Coupling
C15	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Tone Compensation
C16	.1	400		P488-01	GT4P1		ST-4-1	TM-1	Motor Isolation
C17	.02	1200		P1688-02	GT16S2		STM-16-02	MB-12	Buffer
C18	3.5	330 VAC		SRFR	KZ3033G-G-0			19P55	Buffer
C19	.03	400		P488-03	GT4S3		ST-6-03	TM-13	Hash Filter
C20	.03	400		P488-03	GT4S3		ST-6-03	TM-13	Hash Filter
C21	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Hash Filter

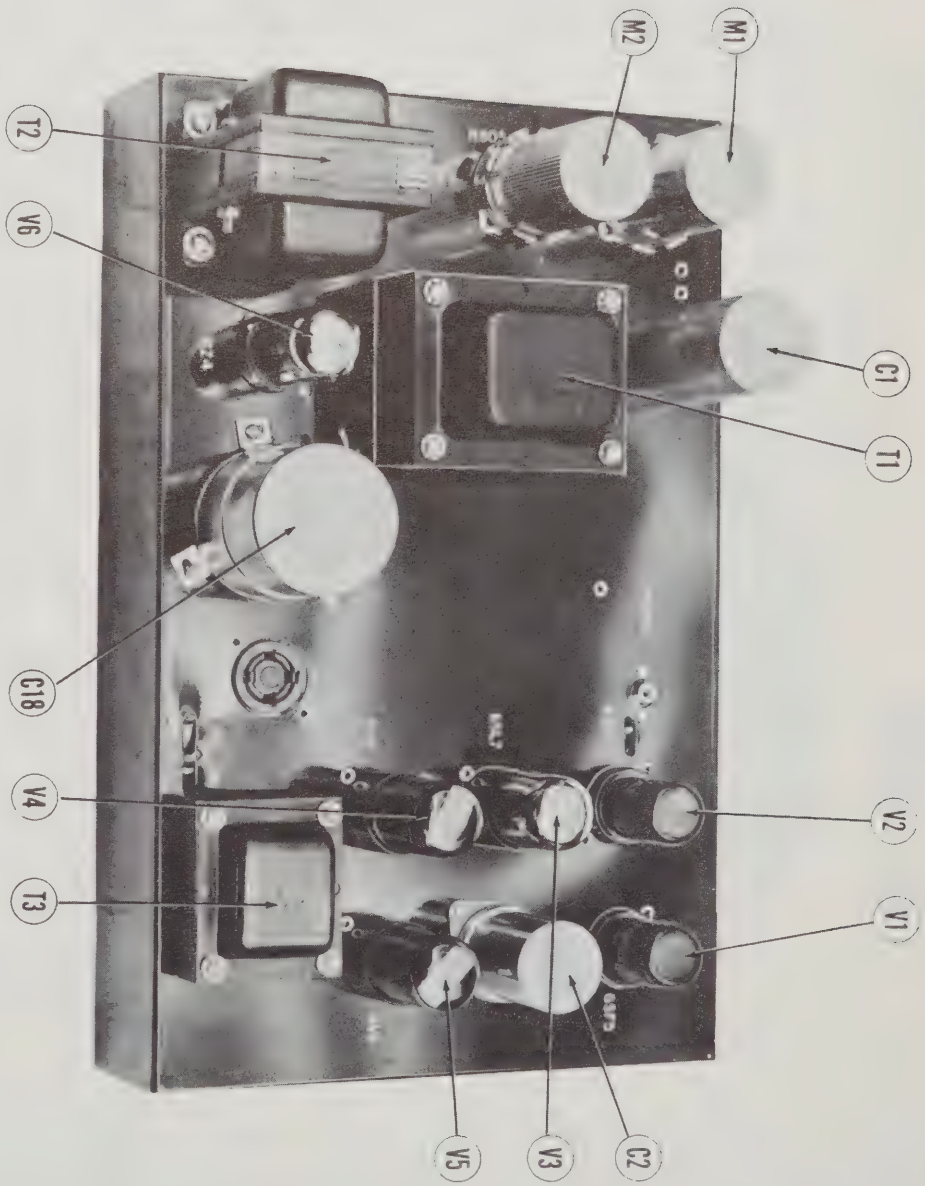
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	CLAROSTAT PART No.	
R1	500KΩ	½		Q13-133	M-60-Z	Mike control
R2	500KΩ	½		Q13-133	M-60-Z	Phono control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	
R3	1 Meg	½		BTS-1 Meg	Mike Amp. Grid
R4	100KΩ	½		BTS-100K	Mike Amp. Plate
R5	100KΩ	½		BTS-100K	Mike Amp. Plate Decoupling
R6	500KΩ	½		BTS-470K	Isolation
R7	220KΩ	½		BTS-220K	Isolation
R8	500KΩ	½		BTS-470K	1st AF Grid
R9	2000Ω	½		BTS-2200	1st AF Cathode
R10	100KΩ	½		BTS-100K	1st AF Plate
R11	47KΩ	½		BTS-47K	1st AF Plate Decoupling
R12	500KΩ	½		BTS-470K	2nd AF Grid

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CHALLENGER PART No.	IRC PART No.	
R13	2000Ω	½		BTS-2200	2nd AF Cathode
R14	100KΩ	½		BTS-100K	2nd AF Plate
R15	2000Ω	½		BTS-2200	Phase Inv. Cathode
R16	8200Ω	½		BTS-8200	Phase Inv. Grid
R17	100KΩ	½		BTS-100K	Phase Inv. Plate
R18	100KΩ	½		BTS-100K	Tone Compensation
R19	100KΩ	½		BTS-100K	Tone Compensation
R20	47KΩ	½		BTS-47K	Tone Compensation
R21	47KΩ	½		BTS-47K	Tone Compensation
R22	47KΩ	½		BTS-47K	Phase Inv. Decoupling
R23	100KΩ	½		BTS-100K	Output Grid
R24	100KΩ	½		BTS-100K	Output Grid
R25	270Ω	2		BW-2-270	Output Cathode
R26	15KΩ	2		BT-2-15K	Voltage Divider
R27	100KΩ	1		BTA-100K	Voltage Divider
R28	300Ω	4		AB-300	Filter
R29	2200Ω	1		BTA-2200	Series Buffer
R30	2000Ω	½		BTS-2200	Hum. Balance
R31	100Ω	½		BW-½-100	Hash. Filter

TRANSFORMER (POWER – VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CHALLENGER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .67A or 6VDC @ 7.8A	820VCT @ .083A DC	6.5VAC @ 2.8A		T-378B			P-4075
T2	6VDC @ 3A	117VAC			T-318B			

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE PRI.	IMPEDANCE SEC.	DC RES. PRI.	DC RES. SEC.	CHALLENGER PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
T3	15KΩ CT	4Ω 8Ω 15Ω 70V	265Ω CT	.6Ω .85Ω 1.1Ω 11Ω	T-278B	A-3870#	RO-111		#Drill New Mtg. Holes

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				CHALLENGER PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	Int.	6.0	115∿	H507	CS-00†	5515†	
M2	Int.	6.0	60∿	H505	2521		

†Remove Leads From Standby And Amplifier Vibrator Switch And Put Standby And Amp. Vib. Switch In Series With Pin 1 Of Vibrator Socket.

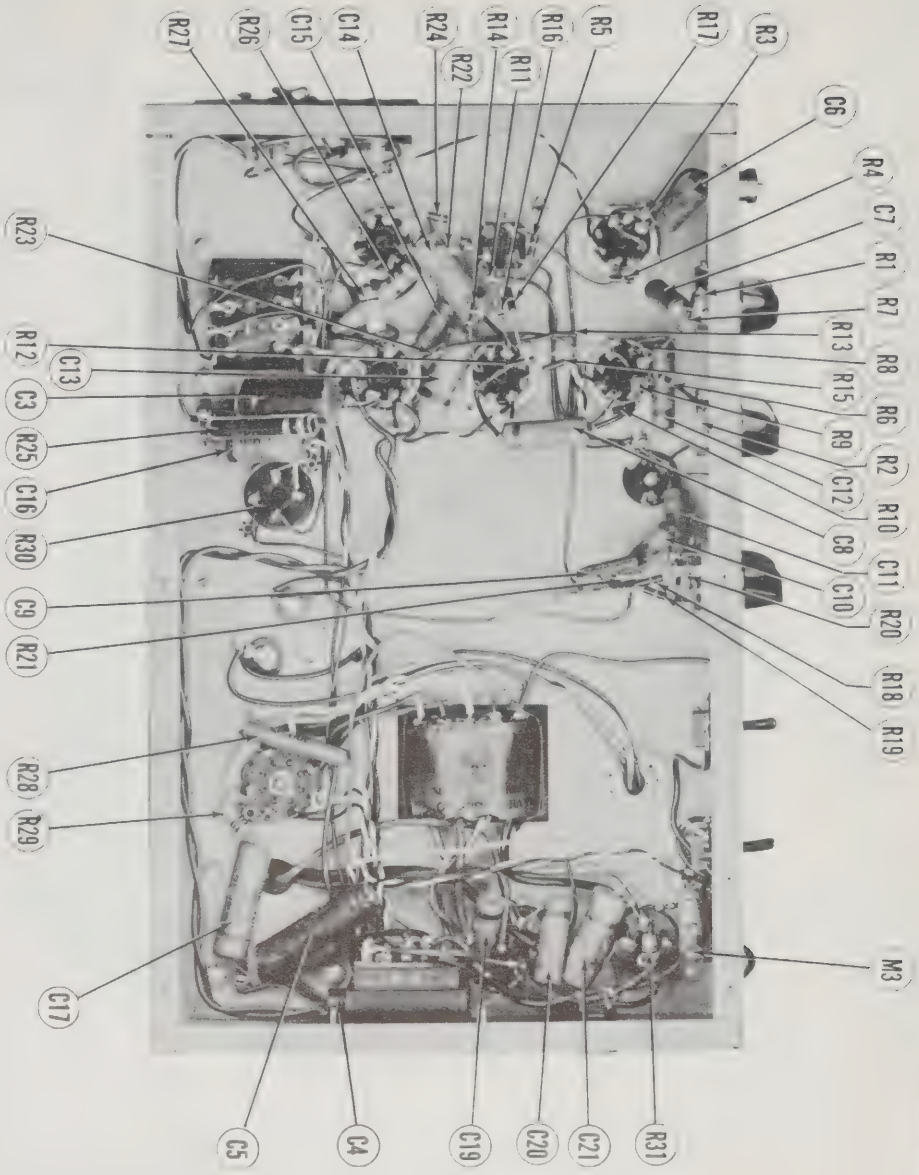
DIAL LIGHTS

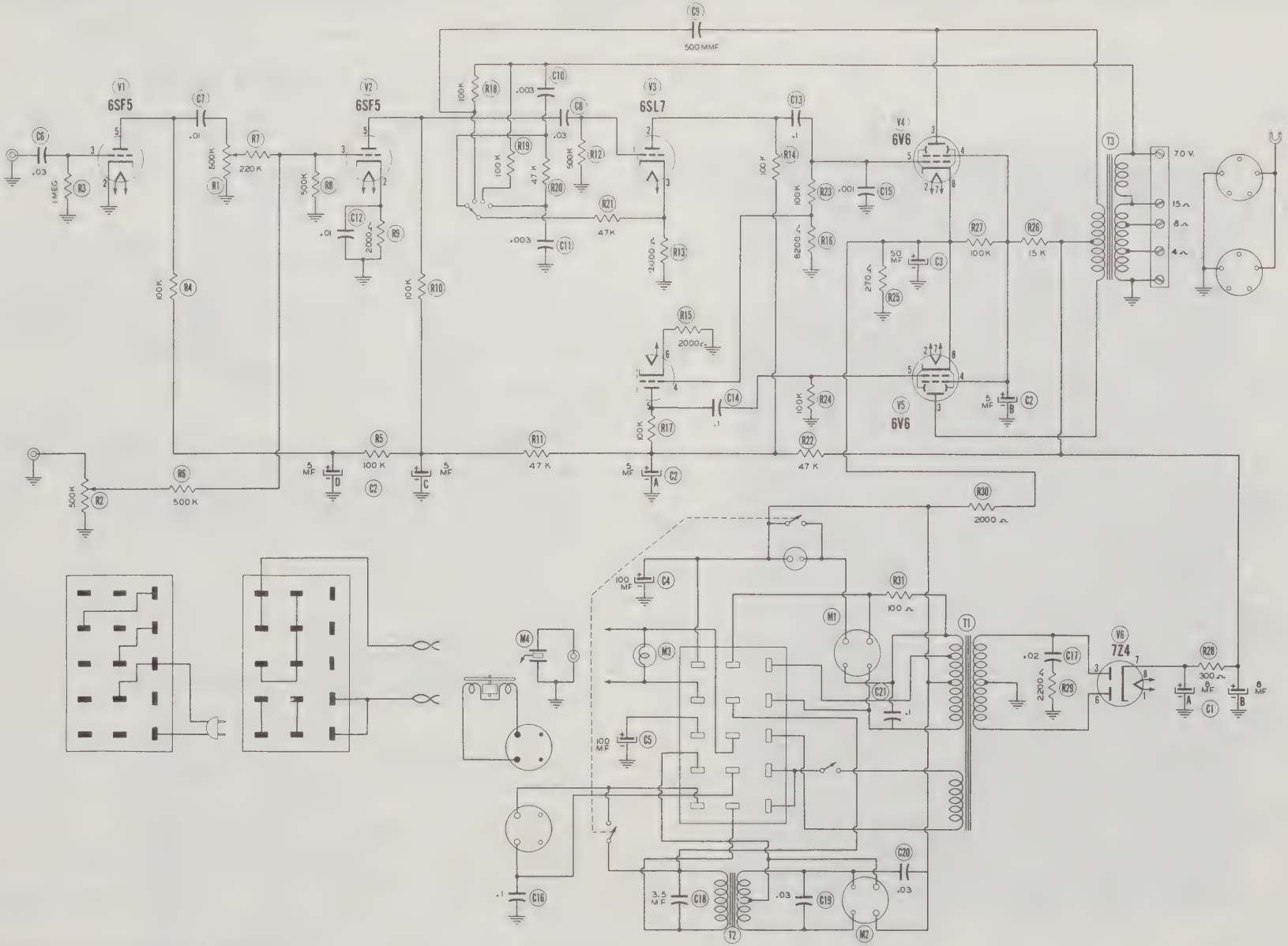
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					CHALLENGER PART No.		
M3	Bayonet	6-8V	0.15A	Brown			Type #47

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA		REMARKS
	CHALLENGER PART No.	ASTATIC PART No.	
M4		L-70A	

CHASSIS—BOTTOM VIEW





A PHOTOFACT STANDARD NOTATION SCHEMATIC

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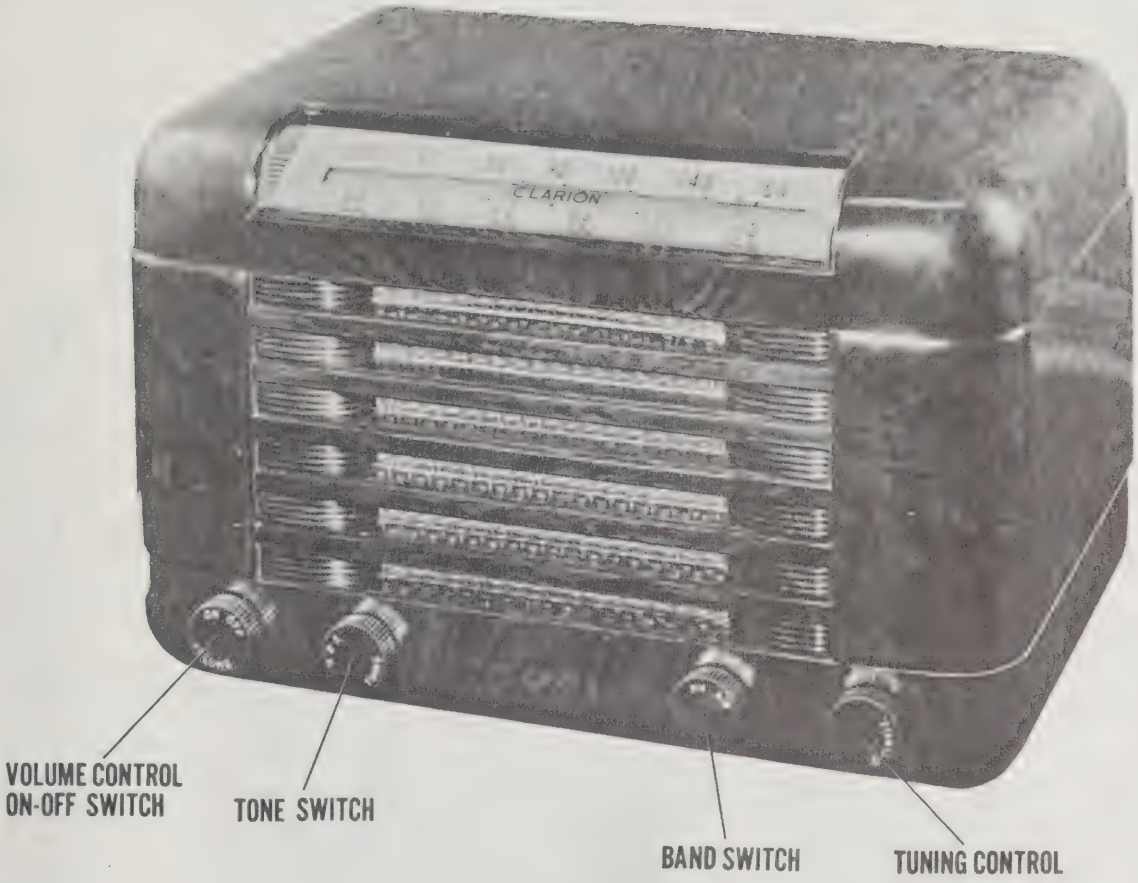
4914-4

CLARION
MODEL 14965



CLARION
MODEL 14965

CLARION MODEL 14965

TRADE NAME	Clarion, Model 14965
MANUFACTURER	Warwick Mfg. Corp., 4640 W. Harrison St., Chicago 44, Illinois
TYPE SET	AC Operated AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(EIGHT)	Types 12AT7 FM RF Amp.-Mixer, 6BE6 FM Osc.-AM Converter, 6BA6 1st IF Amp., 6BA6 FM 2nd IF Amp., 6AL5 Ratio Detector, 6AT6 AM DET-AVC-AF, 6AQ5 Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC RATING: .54 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1600KC FREQ. MOD. 88-108MC

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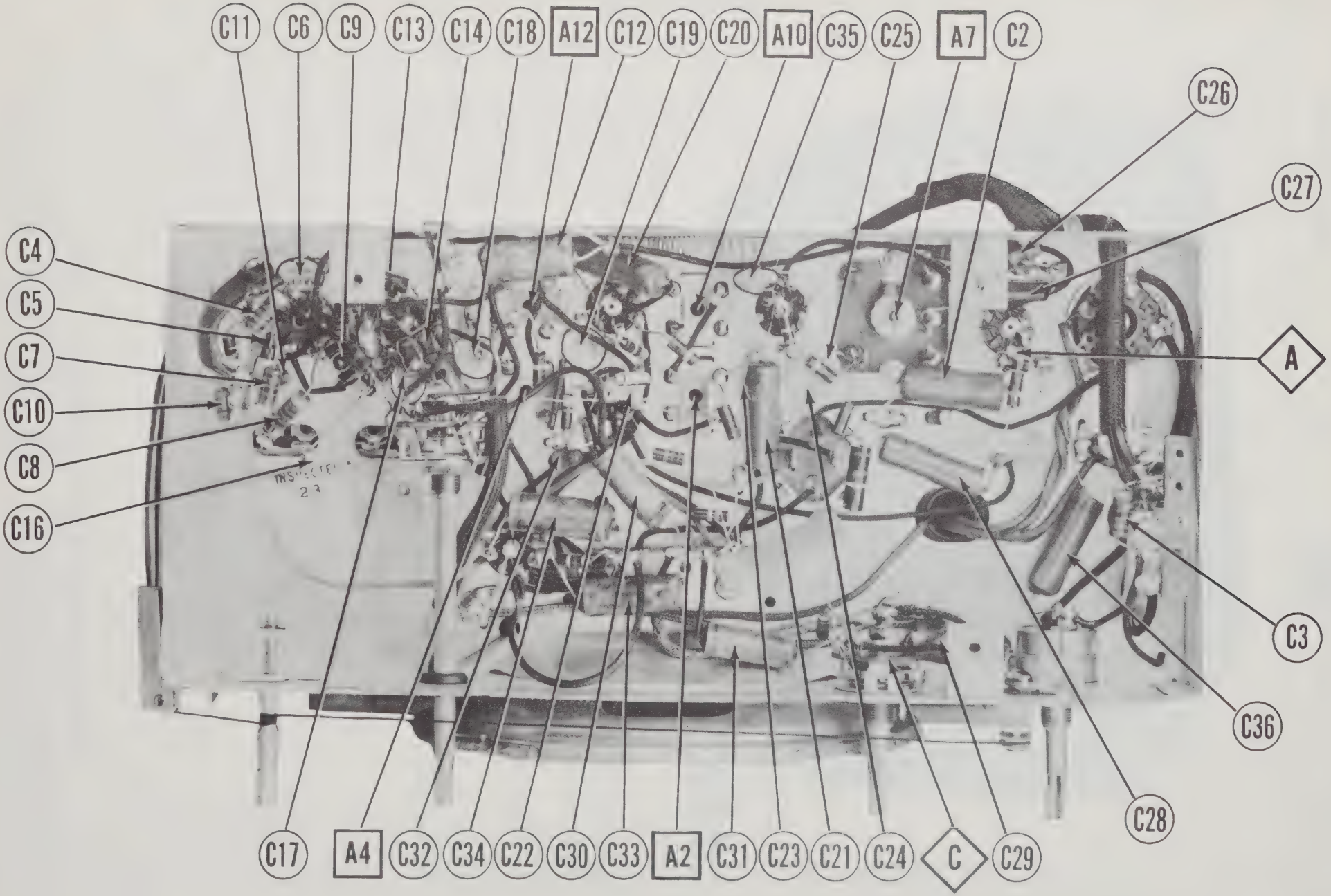
DATE 7/49 4914-5 SET #66 FOLDER #5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C6
C9
C13
C14
C18
A12
C12
C19
C20
A10
C35
C25
A7
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C27
C4
C5
C7
C10
C8
C16
A
C3
C36
C28
C17
A4
C32
C34
C22
C30
C33
A2
C31
C23
C21
C24
C
C29

CLARION
MODEL 14965

PAGE 3

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CLARION PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	FM RF Amp.-Mixer	12AT7	12AT7		
V2	FM Osc.-AM Conv.	6BE6	6BE6	7CH	
V3	1st IF Amp.	6BA6	6BA6	7BK	
V4	2nd FM IF Amp.	6BA6	6BA6	7BK	
V5	Ratio Det.	6AL5	6AL5	6BT	
V6	AM DET-AVC-AF	6AT6	6AT6	7BT	
V7	Power Output	6AQ5	6AQ5	7BZ	
V8	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CLARION PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	350	A18-291	AF88J4A	UP4445C		DY-406	EL-432	◓Filter
B	30	300		PRS350/24	BR3045				■Filter
C	30	300							▲Filter
D	20	25							Output Cath. Bypass
C2	4	50	A18-292	PRS150/4	BR550		M-4-150	TVA-13	Stabilizing Cap.
C3	100		A15-196	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Ant. Coupling
C4	100		A15-196	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Ant. Coupling
C5	1000		A16-195	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Cath. Bypass
C6	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C7	100		A15-196	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C8	100		A15-196	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C9	1000		A16-195	1467-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM Mixer Cath. Byp.
C10	1000		A16-195	1467-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Bypass
C11	1000		A16-195	1467-001	1W5D1	GP2L-001	MW.5-21	1FM-21	FM RF Mixer Fil. Byp.
C12	.05	200	A16-197	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C13	2.2		A83-376			NP0K-3			Osc. Feedback
C14	33		A15-210	1468-00004	5W5Q3	NP0L-33	MO.5-43	MS-43	Osc. Grid Cap
C15	15		A15-209					MS-415	Fixed Trimmer
C16	1.5		A15-206						FM Osc. Coupling
C17	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Anode Bypass
C18	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Decoupling
C19	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C20	.01	400	A16-192	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	1st IF Screen Byp.
C21	.01	400	A16-192	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	1st IF Decoupling
C22A	100		Note	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
B	100		Note	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C23	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Cath. Bypass
C24	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
C25	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Decoupling
C26	270		A15-208	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Diode Load Cap
C27	.003	200	A16-180	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	De-emphasis
C28	.01	400	A16-192	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	RF Bypass
C29	.02	400	A16-196	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C30	.005	600	A16-199	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C31	.005	600	A16-199	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Compensation
C32	270		A15-208	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass
C33	.02	400	A16-196	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C34	.002	600	A16-198	P688-002	GT6D2		ST-6-002	TM-22	Output Plate Bypass
C35	5000		A16-177	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Fil. Bypass
C36	.01	400	A16-192	P488-01	GT4S1		ST-4-01	TM-11	Line Filter

Note Items C22A, C22B, and R15 Are Combined Into One Unit Obtainable Under Mfgr's Part No. A17-101.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CLARION PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	2 Meg	½	B24-181	Q13-139	AM-66-Z	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Attach to R1A per instructions

PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

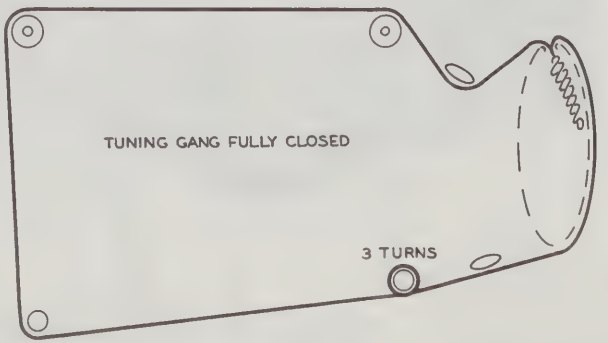
ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: CLARION PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	Loop Ant.	1.2Ω		SC84-292		
L2	RF Choke	0Ω		A33-231		Wound On 22Ω Resistor
L3A	RF Cathode Choke	.1Ω		A10-515		
B	AM Osc.Coil	1Ω	5Ω			
L4	FM Osc.Coil	0Ω		A10-517		
L5	FM Ant.Coil	0Ω		A10-516		Wound On 1500Ω Resistor
L6	RF Plate Choke	.5Ω		A33-233		
L7	FM RF Coil	0Ω		A10-518		
L8	FM 1st IF	.8Ω	.8Ω	A10-519		
L9	AM 1st IF	15Ω	15Ω	A10-521	16-6678	
L10	FM 2nd IF	1.8Ω	.8Ω	A10-520		
L11	AM 2nd IF	9Ω	9Ω	A10-522	16-6678	
L12	Ratio Det.	1.5Ω	.3Ω	SC10-492		
L13	Line Choke	.2Ω		A33-230		
L14	Line Choke	.2Ω		A33-230		
L15	Fil. Choke	.5Ω		A33-232		
L16	Fil. Choke	.5Ω		A33-232		
L17	Fil. Choke	.2Ω		A33-227		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: CLARION PART No.		NOTES
M1	Bayonet	6-8V	0.15A	Brown			Type #47
M2	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	CLARION PART No.	NOTES
M3	Switch	A69-183	Band
M4	Switch	A26-125	Tone
M5	2 Gang Var. Cap.	C19-200	(16-517MMF, 27-202MMF)
	Cabinet	D42-379	Walnut
	Cabinet	A42-401	Ivory
	Dial Scale	C67-537	Glass
	Dial Pointer	A58-65	



DIAL CORD DRIVE

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	CLARION PART No.	IRC PART No.	
R2	220Ω	½	A60-753		FM RF Cathode
R3	470KΩ	½	A60-731	BTS-470K	FM RF Grid
R4	2.2 Meg	½	A60-726	BTS-2.2 Meg	AVC Network
R5	470KΩ	½	A60-731	BTS-470K	FM Mixer Grid
R6	2200Ω	½	A60-714	BTS-2200	FM Mixer Cathode
R7	22KΩ	½	A60-744	BTS-22K	Osc. Grid
R8	4700Ω	½	A60-759	BTS-4700	Osc. Anode
R9	1000Ω	½	A60-675	BTS-1000	Decoupling
R10	100KΩ	½	A60-727	BTS-100K	AVC Network
R11	2.2 Meg	½	A60-726	BTS-2.2 Meg	AVC Network
R12	68Ω	½	A60-742		1st IF Cathode
R13	10KΩ	½	A60-760	BTS-10K	1st IF Screen
R14	1000Ω	½	A60-675	BTS-1000	1st IF Decoupling
R15	47KΩ	½		BTS-47K	Diode Filter
R16	470KΩ	½	A60-731	BTS-470K	Diode Load
R17	68Ω	½	A60-742		2nd FM IF Cathode
R18	10KΩ	½	A60-760	BTS-10K	2nd FM IF Screen
R19	1000Ω	½	A60-675	BTS-1000	2nd FM IF Decoupling
R20	270Ω	½	A60-754		Balancing
R21	33KΩ	½	A60-748	BTS-33K	De-emphasis
R22	22KΩ	½	A60-744	BTS-22K	Ratio Det. Diode Load
R23	100KΩ	½	A60-727	BTS-100K	AVC Network
R24	47KΩ	½	A60-730	BTS-47K	Tone Compensation
R25	6.8 Meg	½	A60-762	BTS-6.8 Meg	AF Grid
R26	270KΩ	½	A60-747	BTS-270K	AF Plate
R27	3.3 Meg	½	A60-761	BTS-3.3 Meg	DAVC Network
R28	470KΩ	½	A60-731	BTS-470K	Output Grid
R29	270Ω	1	A60-754	BW-1-270	Output Cathode
R30	1000Ω	4	A60-763	AB-1000	Filter
R31	100Ω	1	A60-755	BW-1-100	Filter

#C22A, C22B and R15 Are Combined Into One Unit Obtainable Under Mfgr's Part No. A17-101.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CLARION PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .54A	480VCT @ .080A DC	5VAC @ 2A	6.6VAC @ 2.6A	C80-246	P-4078†	TV-70A‡	P-2881††

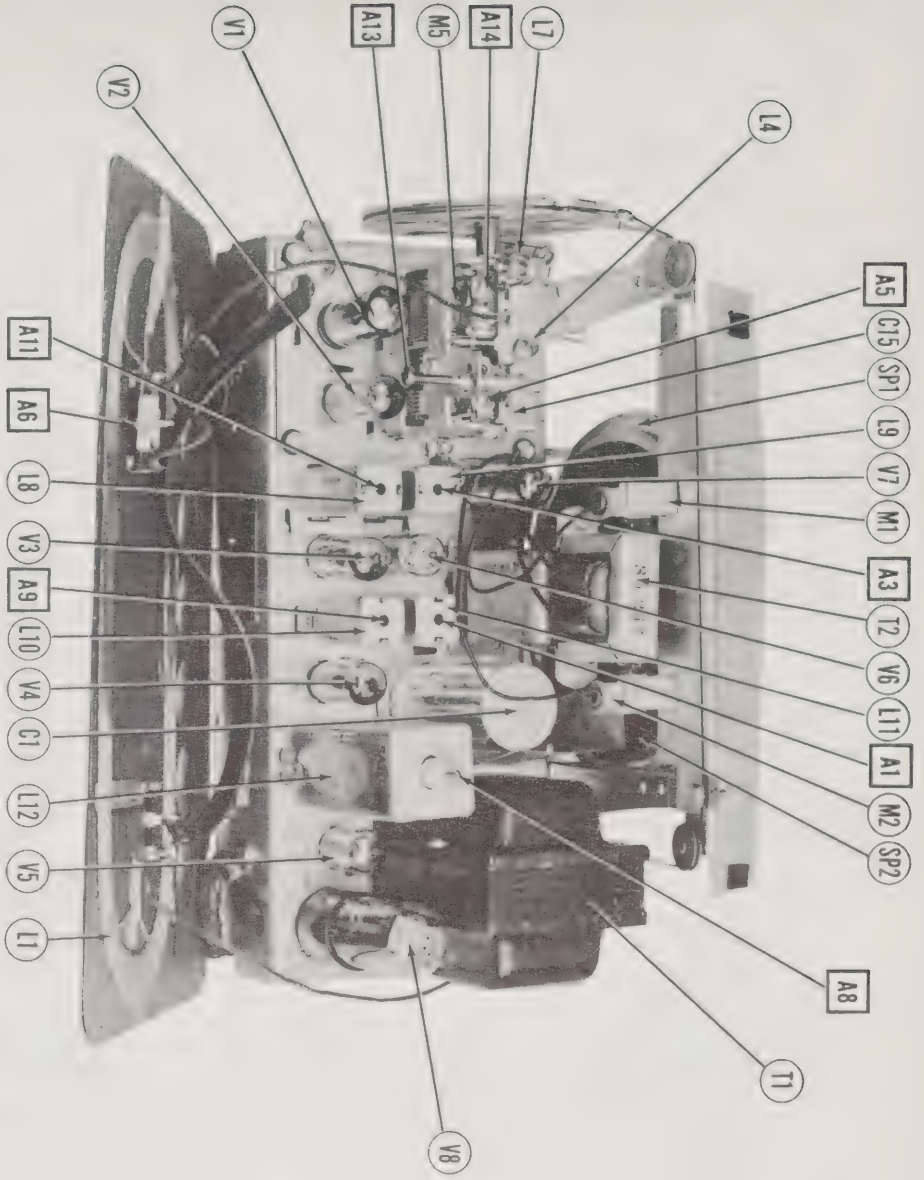
†Add Series Resistor To Reduce Plate Voltage.
§Mount Vertically with Universal Mounting Brackets.
‡Drill New Mounting Holes.

TRANSFORMER (OUTPUT)

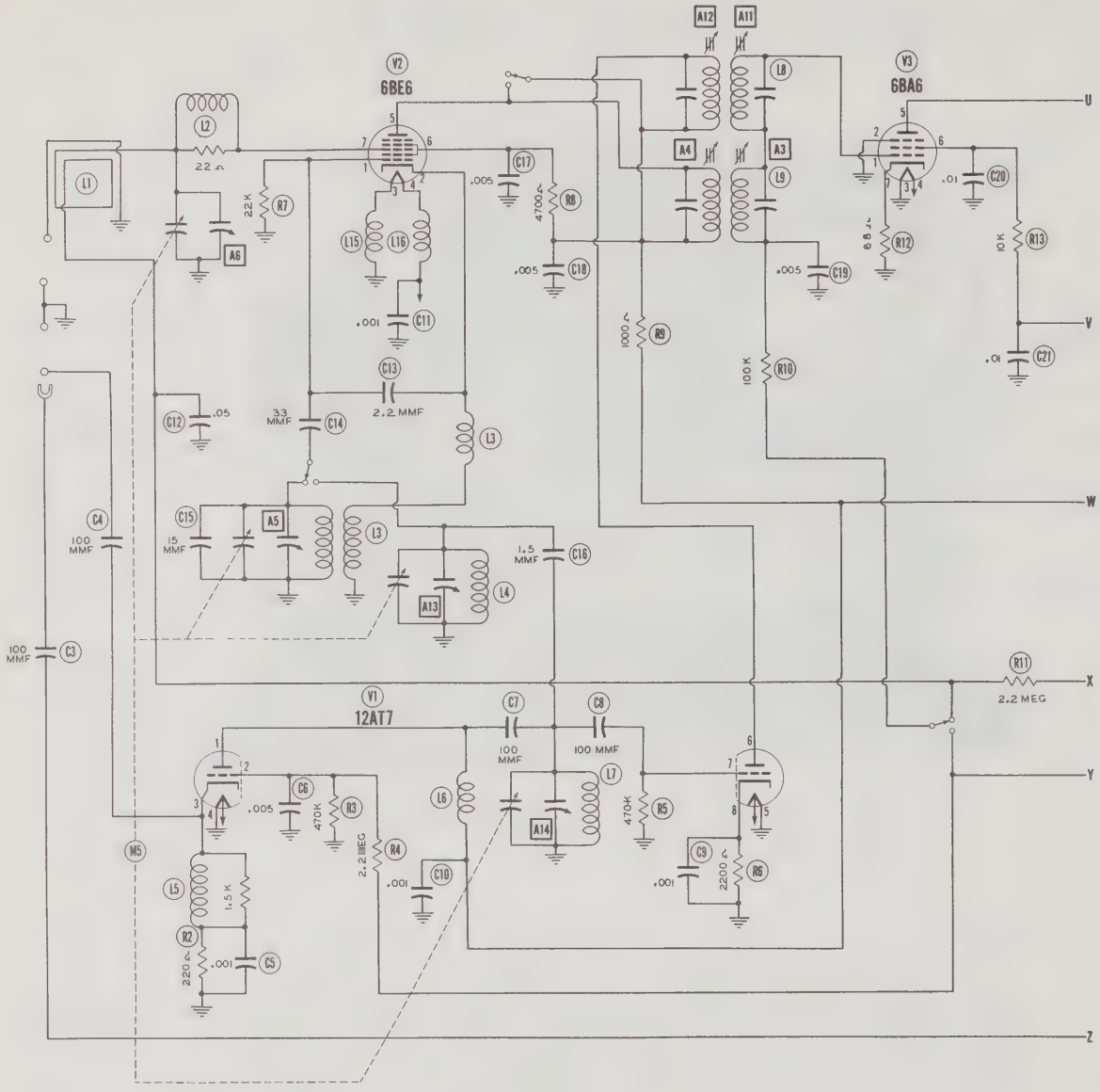
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		CLARION PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	8000Ω	3.5Ω	385Ω	.6Ω	A80-247	A-3823	RO-301	A-2902	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			CLARION PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.	B79-351	ST-110* MOD.P6-V	#A15#	*Trim Flange #Fabricate New Mounting Bracket
	PM	3.5Ω				
	CONE DIA.	V.C. DIA.				
SP2	6"	0.15"				



DATE 7/49 4914-5 SET #66 FOLDER #5



IF = 455 KC AM

IF = 10.7 MC FM

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
‡V1	12AT7	175VDC	0V	1.5VDC	0V	0V	165VDC	0V	3.7VDC	6.5VAC
‡V2A	6BE6	§-5.2VDC	0V	0V	6.5VAC	165VDC	120VDC	-.5VDC		
V2B	6BE6	§-9.8VDC	0V	0V	6.5VAC	165VDC	120VDC	-.1VDC		
V3	6BA6	0V	0V	0V	6.5VAC	170VDC	120VDC	1.1VDC		
‡V4	6BA6	0V	0V	0V	6.5VAC	160VDC	110VDC	1.1VDC		
‡V5	6AL5	-1.2VDC	-.8VDC	-.8VDC	0V	0V	0V	-1.4VDC		
V6	6AT6	-.8VDC	0V	0V	6.5VAC	-2.8VDC	.1VDC	60VDC		
V7	6AW8	0V	7.5VDC	6.5VAC	0V	220VDC	175VDC	0V		
V8	5Y3GT	0V	235VDC	0V	240VAC	0V	240VAC	0V	235VDC	

§TAKEN WITH VACUUM TUBE VOLTMETER.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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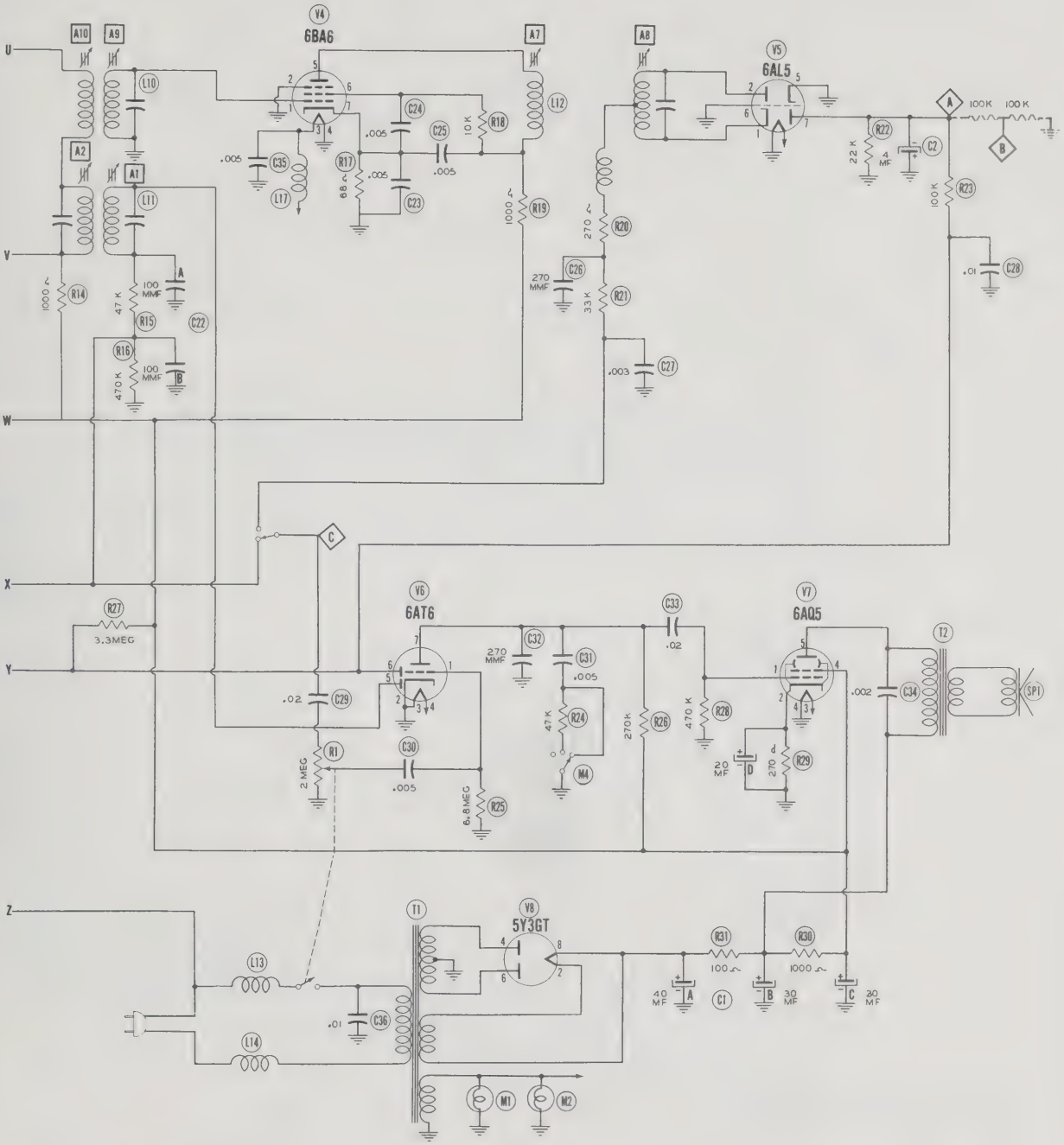

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
‡V1	12AT7	*1000Ω	350KΩ	220Ω	0Ω	0Ω	*2KΩ	400KΩ	2.2KΩ	.5Ω
‡V2A	6BE6	22KΩ	1Ω	.5Ω	.3Ω	*2KΩ	*6.8KΩ	3 Meg.		
‡V2B	6BE6	22KΩ	1Ω	.5Ω	.3Ω	*2KΩ	*6.8KΩ	3 Meg.		
‡V3	6BA6	3 Meg.	0Ω	0Ω	.2Ω	*2KΩ	*12KΩ	68Ω		
‡V4	6BA6	.5Ω	0Ω	0Ω	.2Ω	*2K	*12K	68Ω		
‡V5	6AL5	Inf.	Inf.	.2Ω	0Ω	0Ω	0Ω	50K		
V6	6AT6	6.8 Meg.	0Ω	0Ω	.2Ω	470KΩ	120KΩ	*6.8K		
V7	6AQ5	400KΩ	270Ω	.2Ω	0Ω	*480Ω	*1000Ω	4KΩ		
V8	5Y3GT	Inf.	90KΩ	Inf.	90Ω	Inf.	95Ω	Inf.	2.5K	

*Measured From Pin 8 Of V8.

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to pin 7 (Grid) of 6BE6. Low side to chassis.	455KC (Mod.)	AM (counter clock-wise.)	Tuning cap fully open.	Across voice coil	A1,A2, A3,A4	Adjust for maximum output.
2.	.1MFD	"	1600KC (Mod.)	"	"	"	A5	"
3.	250MMF	High side to Ext. AM Ant. terminal. Low side to chassis.	1400KC (Mod.)	"	Tune for maximum output.	"	A6	"

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 5%) resistors in series from pin 7 of 6AL5 (V5) to chassis. The junction of these two resistors is point B as designated on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V4). Low side to chassis.	10.7MC (Unmod.)	FM (clock-wise)	Point of non-interference	DC Probe to Point ◇A Common to chassis.	A7	Adjust for maximum deflection.
5.	5000MMF	"	"	"	"	DC Probe to Point ◇C Common to point ◇B	A8	Adjust for zero reading. A positive and negative peak will be obtained on either side of the correct setting.
6.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V3). Low side to chassis.	"	"	"	DC Probe to Point ◇A Common to chassis.	A9,A10	Adjust for maximum deflection.
7.	5000MMF	High side to pin 7 (Grid) of 12AT7 (V1). Low side to chassis.	"	"	"	"	A11, A12	"

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V3). Low side to chassis.	10.7MC (450KC Sweep)	FM	Point of non-interference.	Vert.Amp. to Point ◇A Low side to chassis.	A7,A9, A10	Disconnect stabilizer cap. C2. Adjust A7,A9 & A10 for maximum amplitude and symmetry as per Fig 1.
5.	5000MMF	High side to pin 7 (Grid) of 12AT7 (V1). Low side to chassis.	"	"	"	"	A11, A12	"
6.	5000MMF	"	"	"	"	Vert.Amp. to Point ◇C Low side to chassis.	A8	Reconnect stabilizer cap. C2. Adjust A8 so cross-over point occurs at center of pattern as per Fig 2. Retouch A7 for maximum amplitude and straightness of crossover lines. Continue with step 8.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
8.	300Ω carbon res.	High side to right hand dipole terminal. Low side to chassis.	108.5MC	FM	Tuning cap fully open	DC Probe to Point ◇A Common to chassis.	A13	Adjust for maximum deflection.
9.	300Ω carbon res.	"	105MC	"	Tune for max. signal	"	A14	"

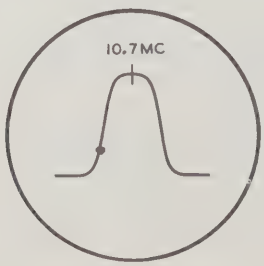

FIG. 1

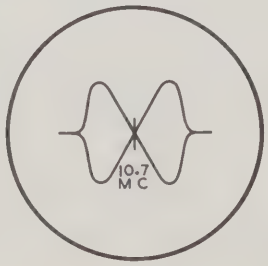

FIG. 2

PHOTOFACT* Folder

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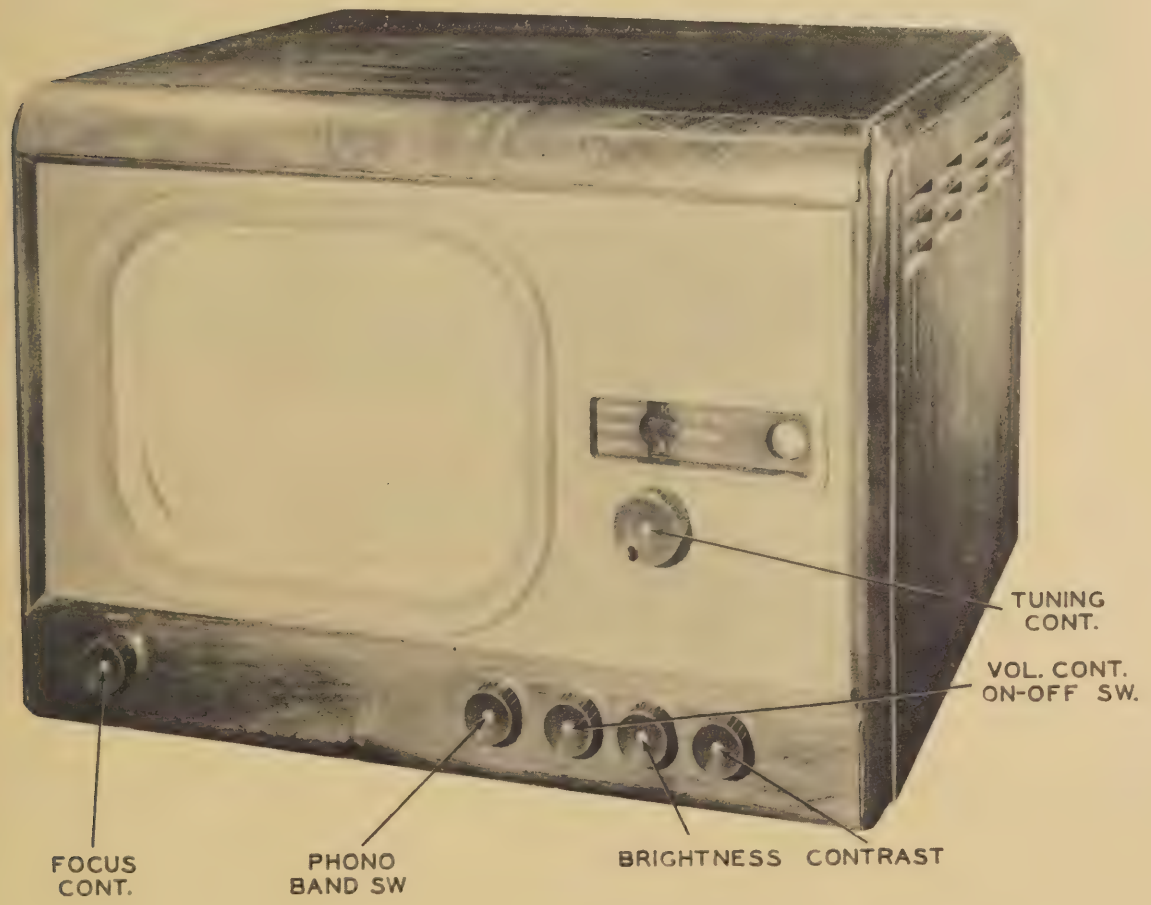

Model 9-407M-1

CROSLEY
MODELS 9-407, 9-407M-1, 9-407M-2

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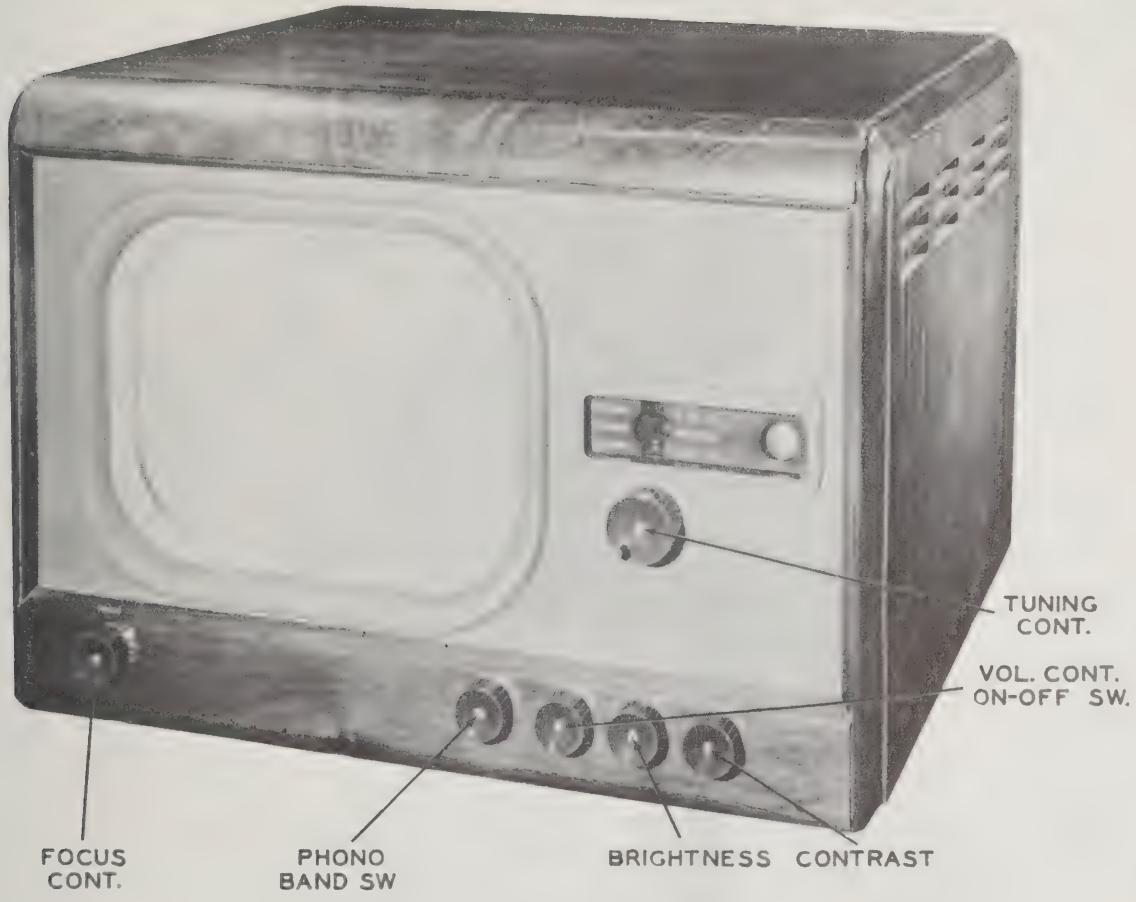

CROSLEY
MODELS 9-407, 9-407M-1, 9-407M-2

CROSLEY MODEL 9-407M-1

TRADE NAME Crosley Models, 9-407, 9-407M-1, 9-407M-2
MANUFACTURER Crosley Division, Aveo Manufacturing Corp., Cincinnati 25, Ohio
TYPE SET Television and FM receiver
TUBES Twenty-Eight

POWER SUPPLY 117 Volts, 60 cycles AC RATING: 2.6 Amps. @ 117 Volts
TUNING RANGE—44-216MC

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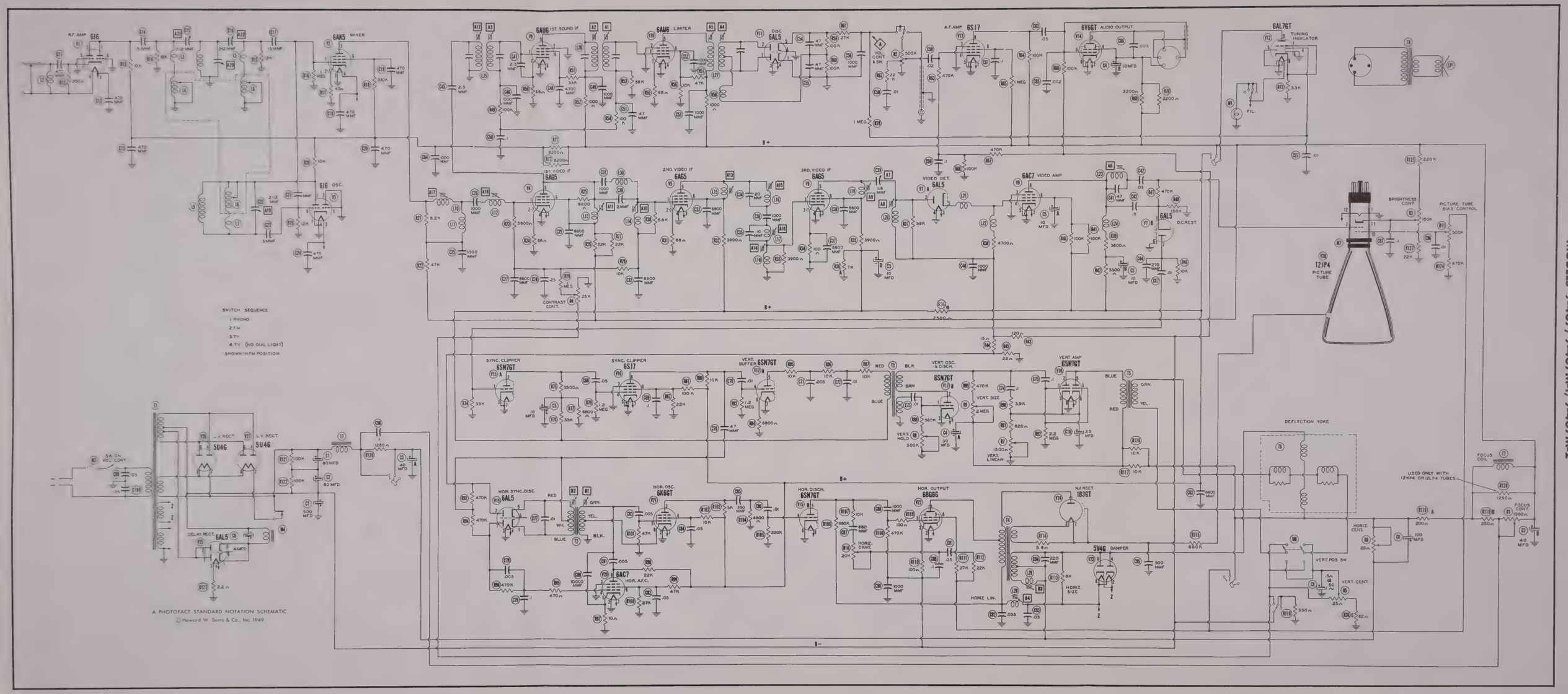

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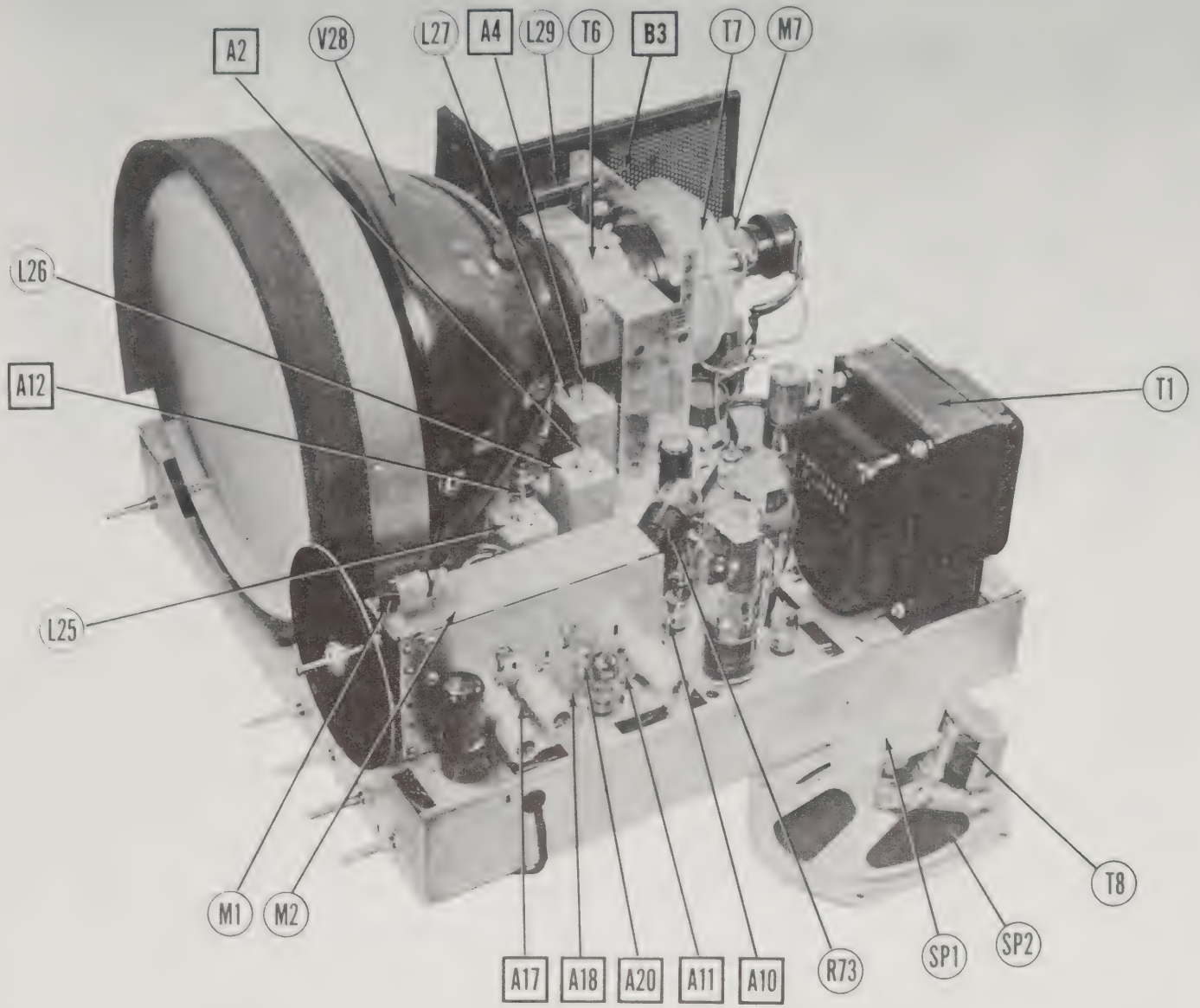
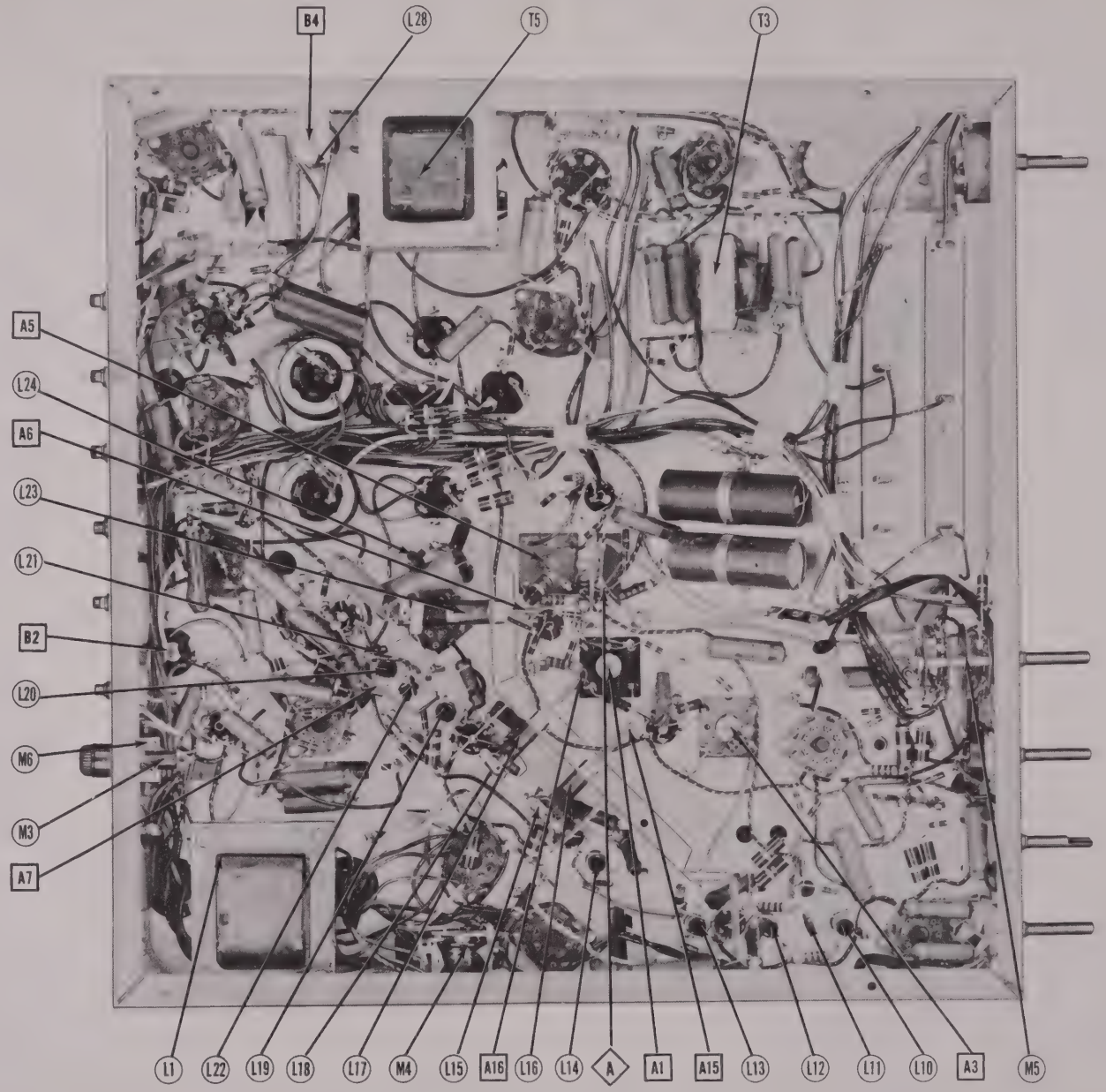
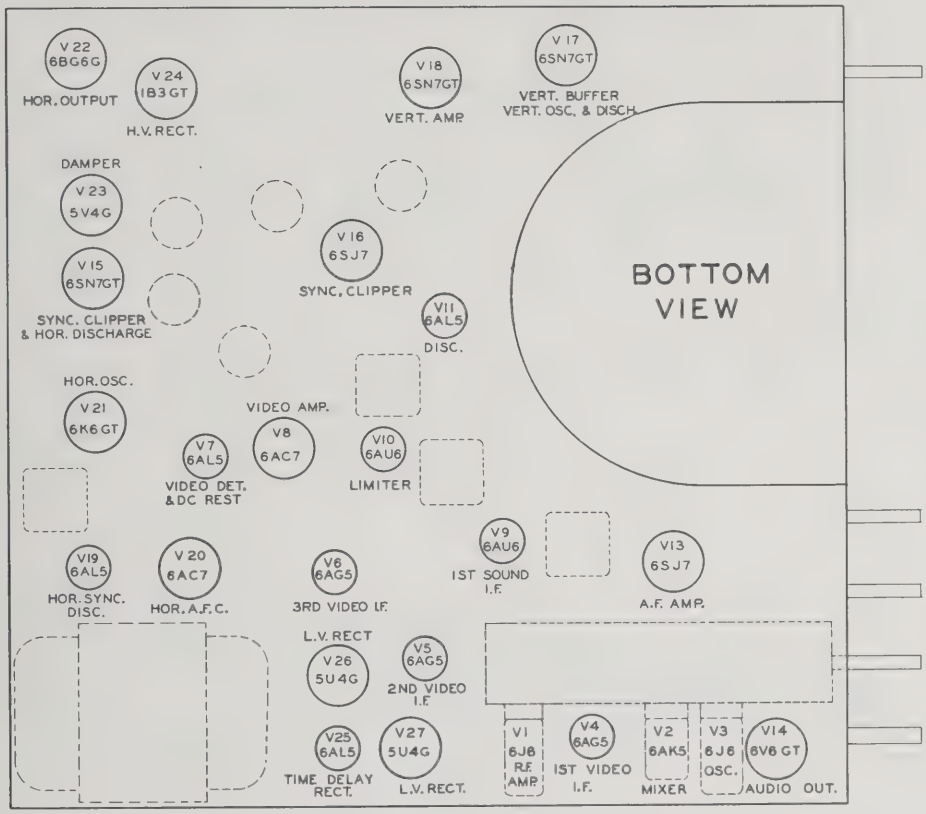
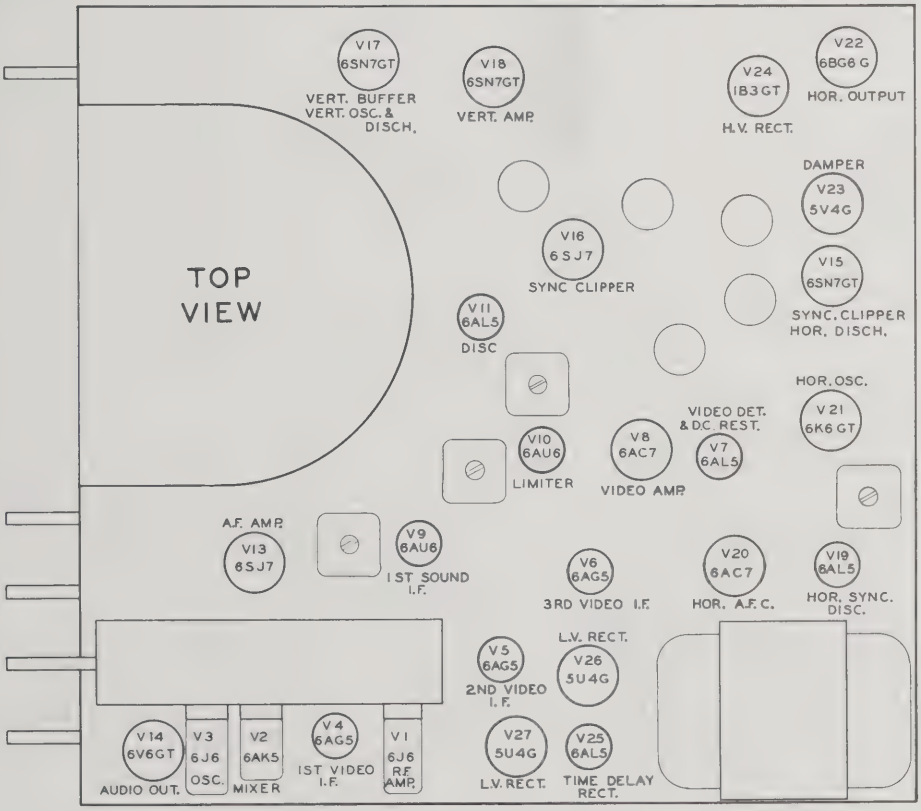


CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION





TUBE PLACEMENT CHART

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Before attempting alignment, disable the high voltage to eliminate the shock hazard, by removing the 6K6GT horizontal oscillator (V21).
Place all test equipment "ground" leads as close as possible to their respective "hot" leads.

SOUND IF ALIGNMENT

Start the sound IF Alignment with the contrast control at maximum. As the alignment progresses, reduce the contrast control to prevent overloading.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
1.	.05MFD	High side to pin 1 (Grid) of 6AU6 (V9). Low side to chassis.	22MC (1MC Sweep)	21.8MC 21.9MC 22.0MC	Any	Vert. Amp. to pin 6 (Screen Grid) of 6AU6 (V10). Low side to chassis.	A1, A2	Adjust for maximum amplitude and symmetry as per Fig 1 or 2.
2.	.05MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	"	"	"	"	A3	Adjust for maximum amplitude and symmetry as per Fig 3 or 4.
3.	.05MFD	"	"	"	"	Vert. Amp. to Point (A) Low side to chassis.	A4, A5	Adjust A4 so 21.9MC marker is positioned at center of pattern as per Fig 5 or 6. Adjust A5 for maximum amplitude and straightness of the diagonal line going from peak to peak. Do not move the two green detector plate leads unless necessary to obtain the proper curve. Dress the left green lead against the chassis and the other clear of components and the chassis or vice versa. The dressing of these leads will determine the polarity of the curve as shown in Fig 5 and 6. Select curve with best symmetry and bandpass. Repeat steps 1 and 2.

4.5 MC TRAP ADJUSTMENT

See Figure 12 for the detector probe used in conjunction with the oscilloscope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
4.	.05MFD	High side to pin 4 (Grid) of 6AC7 (V8). Low side to chassis.	Off	4.5MC (400∿ Mod.)	Any	Vert. Amp. thru detector probe to pin 2 of picture tube. Low side to chassis.	A6	Adjust for minimum 400∿ indication on scope.

VIDEO IF ALIGNMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.	.05MFD	High side to pin 1 (Grid) of 6AG5 (V6). Low side to chassis.	24MC (10MC Sweep)	22.9MC 26.4MC	Any	Vert. Amp. direct to pin 2 of picture tube. Low side to chassis.	A7, A8, A9	If necessary, adjust A7 gimmick for proper width by changing space at the center of the leads. Adjust A8 and A9 for curve as per Fig 7. If dips are present in the curve, short the junction of C35, C36, and L17 to chassis during the adjustment of A8 and A9.
6.	.05MFD	High side to pin 1 (Grid) of 6AG5 (V4). Low side to chassis.	"	21.9MC 22.9MC 26.4MC 27.9MC	"	Vert. Amp. thru detector probe to pin 5 (plate) of 6AG5 (V5).	A10, A11	Set contrast control and the oscilloscope for maximum gain. Adjust A10 and A11 for maximum gain and curve shape as per Fig 8.
7.	.05MFD	"	"	21.9MC (Set to exact sound IF freq.)	"	"	A12	Adjust so 21.9MC marker drops into "notch". Increase marker amplitude for finite adjustment.
8.	.05MFD	"	"	21.9MC 22.9MC 26.4MC 27.9MC	"	Vert. Amp. thru detector probe to pin 5 (plate) of 6AL5 (V6). Low side to chassis.	A13, A14	Reduce scope gain and set contrast control just below overlead. Adjust for maximum gain and proper curve as per Fig 9.
9.	.05MFD	"	"	21.9MC	"	"	A15	Adjust A15 so 21.9MC marker drops into "notch". Increase marker amplitude for finite adjustment.
10.	.05MFD	"	"	27.9MC	"	"	A16	Adjust A16 so 27.9MC marker drops into "notch". Increase marker amplitude for finite adjustment.
11.	.05MFD	"	"		"	Vert. Amp. direct to picture tube grid (pin 2). Low side to chassis.	A13, A14	Retouch A13 and A14 for curve as per Fig 10.
12.	.05MFD	High side to pin 6 (Grid) of 6J6 (V3). Low side to chassis. Leave V3 out of socket.	"	22.9MC 26.4MC	"	"	A17, A18	Adjust for maximum gain and proper curve as per Fig 11.

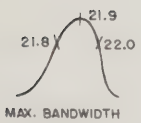


FIG. 1

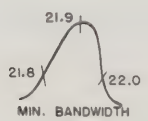


FIG. 2

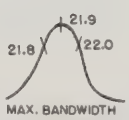


FIG. 3

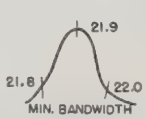


FIG. 4

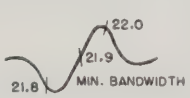


FIG. 5

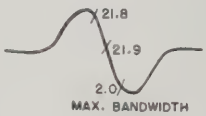


FIG. 6

OSCILLATOR ALIGNMENT

(A). Unsolder the blue lead only from the lug on L10.
(B). Remove the RF unit mounting screws.
(C). Remove the bottom shield from the tuner and replace with dummy shield shown in Fig 13.
(D). Remount the RF Tuner on the chassis.
(E). Reconnect the blue lead which was disconnected in step 1.
(F). Check the dial setting on the shaft. With the shaft in the full clockwise position, the top window of the rear dial and the No. 13 on the front dial are directly centered over the vertical centerline of the tuning shaft.
(G). The sound IF channel must be accurately aligned before aligning the oscillator circuits.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
13.	Two 125Ω carbon res.	Across antenna terminals with 125Ω resistor in each generator lead.	71.75MC	4	DC Probe to Point ◇ Common to chassis.	A19	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.
14.	"	"	215.75MC	13	"	L7	Expand or compress the coil turns for zero reading as obtained in the step above.
15.	"	"	209.75MC	12	"		Check all other channels to see that zero reading is obtained at the correct dial setting when the sound carrier signal is being fed to the receiver.
			203.75MC	11			
			197.75MC	10			
			191.75MC	9			
			185.75MC	8			
			179.75MC	7			
			87.75MC	6			
			81.75MC	5			
			65.75MC	3			
			59.75MC	2			

RF ALIGNMENT

(A). Leave the dummy shield on the tuner as used during the oscillator alignment procedure.
(B). Solder a 5 inch lead to the screen grid of the 6AK5 mixer tube (V2). Run this lead through the plate lead hole to the underside of the chassis.
(C). Set the tuning control for the zero reading on VTVM with 71.75MC fed in at antenna. (Follow step 13 to obtain this dial setting). Do not change this dial setting for the low band alignment as outlined in step 16.
(D). After this setting has been obtained unsolder the blue lead connecting to L10 and connect together with the 5 inch screen lead on the mixer tube and connect them to the vertical input of the oscilloscope.
(E). After step 16 has been completed, reconnect the blue lead to L10 and adjust the runer to give a zero reading on channel 13 with a 215.75MC signal being fed to the antenna (Follow step 14 to obtain this setting).
(F). Disconnect the blue lead from L10 and, connected together with the 5 inch screen lead, connect to the vertical input of the oscilloscope.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
16.	Two 125Ω carbon res.	Across antenna terminals with 125Ω in each generator lead.	69MC (10MC Sweep)	71.75MC 67.25MC	4 (See step "C" in RF alignment Instructions.)	See step "D" in RF Alignment Instructions.	A20, A21, A22	Adjust to give a bandpass of 4.5MC similar to Fig 14. The adjustment of A21,& A22 is correct when the rocking of A20 back and forth causes no appreciably change in the response curve amplitude. The dip between the two markers should not exceed 30%.
17.	"	"	213MC (10MC Sweep)	215.75MC 211.25MC	13 (See step "E" in RF Alignment Instructions)	See step "F" in RF Alignment Instructions.	L3, L5, C14, C17	Adjustment of the high band is accomplished by the positioning of L3, L5 C14 and C17 for curve similar to Fig 15. The bandwidth should not exceed 6MC or be less than 4.5MC on channel 13. If adjustments have been necessary for channel 13, it will be necessary to repeat step 16. Repeat 16 and 17 until no further improvement can be made.

CAUTION:

18. All other channels should be checked for calibration with only a signal generator connected to the antenna terminals using amplitude modulation in a point to point check to eliminate the possibility of error in impedance matching with various types of sweep equipment.

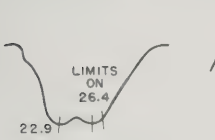


FIG.7

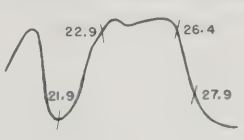


FIG. 8

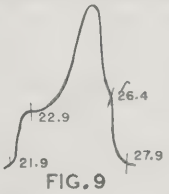


FIG. 9

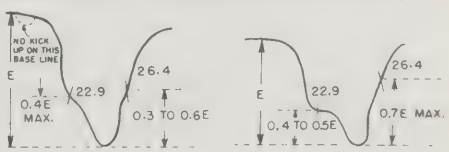


FIG.10 FIG.11

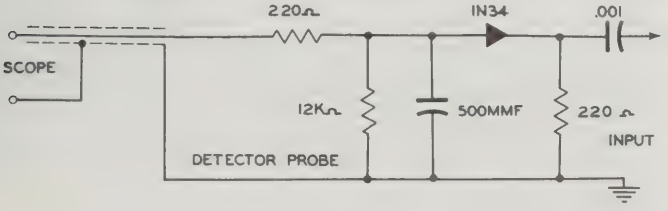


FIG. 12

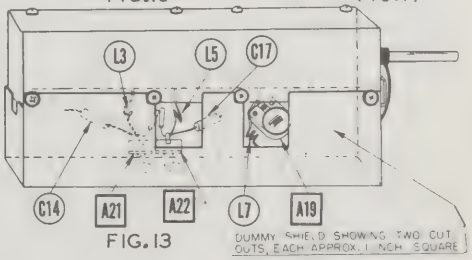


FIG. 13

FIG.14

FIG. 15

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	125VDC	125VDC	6.3VAC	0V	0V	0V	1.8VDC		
V 2	6AK5	-.8VDC	.1VDC	0V	6.3VAC	220VDC	60VDC	.1VDC		
V 3	6J6	80VDC	0V	6.3VAC	0V	0V	§-7.4VDC	0V		
V 4	6AG5	-5V	0V	6.3VAC	0V	300VDC	300VDC	0V		
V 5	6AG5	-5V	0V	6.3VAC	0V	130VDC	187VDC	0V		
V 6	6AG5	0V	1.2VDC	6.3VAC	0V	140VDC	140VDC	1.2VDC		
V 7	6AL5	.5VDC	-2.5VDC	6.3VAC	0V	-2.1VDC	0V	-.1VDC		
V 8	6AC7	0V	6.3VAC	0V	-2.1VDC	0V	170VDC	0V	180VDC	
V 9	6AU6	-.1VDC	0V	0V	6.3VAC	295VDC	150VDC	.8VDC		
V 10	6AU6	-.2VDC	0V	0V	6.3VAC	295VDC	42VDC	.2VDC		
V 11	6AL5	0V	-.3VDC	0V	6.3VAC	0V	0V	-.3VDC		
‡V12	6AL7GT	3.1VDC	6.3VAC	295VDC	0V	0V	0V	0V	3.1VDC	
V 13	6SJ7	0V	6.3VAC	0V	-.6VDC	0V	45VDC	0V	195VDC	
V 14	6V6GT	0V	6.3VAC	235VDC	250VDC	-7.4VDC	-7.4VDC	0V	0V	
V 15	6SN7GT	-.4VDC	4VDC	0V	-35VDC	50VDC	0V	0V	6.3VAC	
V 16	6SJ7	0V	0V	0V	-.6VDC	0V	43VDC	6.3VAC	265VDC	
V 17	6SN7GT	-70VDC -80VDC	105VDC 230VDC	0V	0V	150VDC	6VDC	0V	6.3VAC	
V 18	6SN7GT	0V	300VDC	11VDC 18VDC	0V	300VDC	11VDC 18VDC	6.3VAC	0V	
V 19	6AL5	1.2VDC	-1.5VDC	0V	6.3VAC	.2VDC	0V	-.7VDC		
V 20	6AC7	0V	0V	0V	-.6VDC	0V	100VDC	6.3VAC	0V	
V 21	6K6GT	0V	0V	205VDC	225VDC	-35VDC	290VDC	6.3VAC	.1VDC	
V 22	6BG6G	0V	0V	-1.1VDC	-13VDC	-13VDC	400VDC	6.3VAC	250VDC	TOP CAP *
V 23	5V4G	82VDC	480VDC	290VDC	400VDC	400VDC	400VDC	360VDC	480VDC	
V 24	1B3GT	* DO NOT MEASURE								
V 25	6AL5	50VDC	-11VDC	.2VAC	6.3VAC	50VDC	0V	-11VDC		
V 26	5U4G	0V	430VDC	0V	400VAC	8.5VDC	400VAC	112VAC	430VDC	
V 27	5U4G	0V	430VDC	0V	400VAC	0V	400VAC	0V	430VDC	
V 28	12JP4	0V	0V	PIN 10 300VDC	PIN 11 85VDC	PIN 12 6.3VAC				

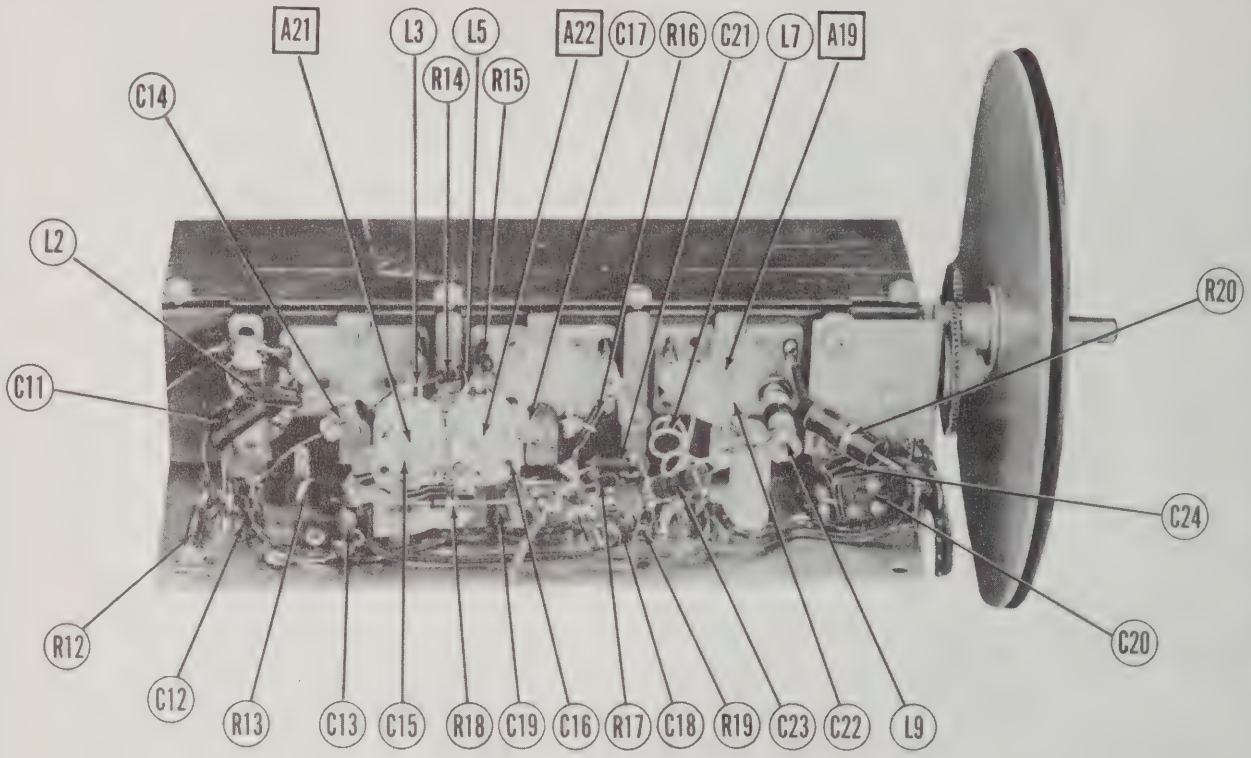
* Do not measure.
‡ Taken in FM position.
§ Taken with VTVM

RESISTANCE READINGS

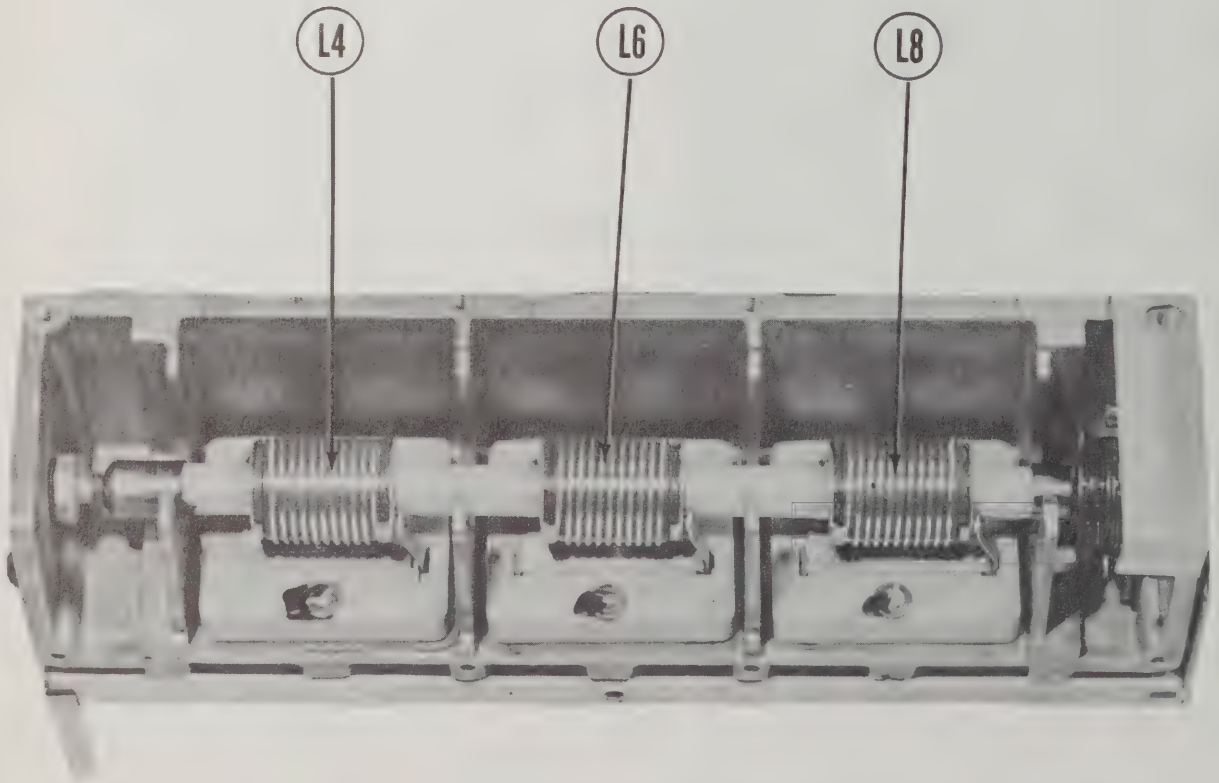
Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6J6	†15KΩ	†15KΩ	.1Ω	0Ω	0Ω	0Ω	200Ω		
V 2	6AK5	1 Meg.	55Ω	0Ω	.1Ω	†48KΩ	†330KΩ	55Ω		
V 3	6J6	†18KΩ	0Ω	.1Ω	0Ω	0Ω	12KΩ	0Ω		
V 4	6AG5	1.2 Meg	68Ω	.1Ω	0Ω	†14KΩ	†14KΩ	68Ω		
V 5	6AG5	1.2 Meg	68Ω	.1Ω	0Ω	†6KΩ	†6KΩ	68Ω		
V 6	6AG5	.7Ω	100Ω	.1Ω	0Ω	†6KΩ	†6KΩ	100Ω		
V 7	6AL5	150KΩ	35Ω	.1Ω	0Ω	4.7KΩ	0Ω	10KΩ		
V 8	6AC7	0Ω	.1Ω	0Ω	4.7KΩ	0Ω	†50KΩ	0Ω	†7KΩ	
V 9	6AU6	260KΩ	0Ω	0Ω	.1Ω	†1.5KΩ	†38KΩ	68Ω		
V 10	6AU6	56KΩ	0Ω	0Ω	.1Ω	†1.5KΩ	†12KΩ	68Ω		
V 11	6AL5	0Ω	100KΩ	0Ω	.1Ω	200KΩ	0Ω	100KΩ		
‡V12	6AL7GT	3.3KΩ	.1Ω	†500Ω	1.5 Meg	3.3KΩ	0Ω	0Ω	3.3KΩ	
V 13	6SJ7	0Ω	.1Ω	0Ω	580KΩ	0Ω	†1 Meg.	0Ω	†100KΩ	
V 14	6V6GT	0Ω	.1Ω	†2KΩ	†2KΩ	100KΩ	55Ω	0Ω	0Ω	
V 15	6SN7GT	39KΩ	†14KΩ	0Ω	220KΩ	†700KΩ	0Ω	0Ω	.1Ω	
V 16	6SJ7	0Ω	0Ω	0Ω	1.2 Meg	0Ω	†21KΩ	.1Ω	†11KΩ	
V 17	6SN7GT	1.1 Meg 600KΩ	†2.5 Meg †470KΩ	0Ω	1.2 Meg	†35KΩ	7KΩ	0Ω	.1Ω	
V 18	6SN7GT	2.2 Meg	†6KΩ	2.2KΩ 820Ω	2.2 Meg	†6KΩ	2.2KΩ 820Ω	.1Ω	0Ω	
V 19	6AL5	470KΩ	20Ω	0Ω	.1Ω	470KΩ	Inf.	950KΩ		
V 20	6AC7	0Ω	0Ω	0Ω	1.5 Meg	10Ω	27KΩ	.1Ω	†22KΩ	
V 21	6K6GT	0Ω	0Ω	†6.5KΩ	†10KΩ	4.7KΩ	†65Ω	.1Ω	21Ω	
V 22	6BG6G	0Ω	0Ω	160Ω	570KΩ	470KΩ	90Ω	.1Ω	†12.5KΩ	TOP CAP †6.5KΩ
V 23	5V4G	85KΩ	†20KΩ	22KΩ	†90Ω	†80Ω	†90Ω	†300Ω		
V 24	1B3GT	*	*	*	*	*	*	*	*	TOP CAP †6.5KΩ
V 25	6AL5	5KΩ	50Ω	2.2Ω	.1Ω	5KΩ	Inf.	50Ω		
V 26	5U4G	30Ω	6.5KΩ	Inf.	75Ω	55Ω	70Ω	6.5KΩ	6.5KΩ	
V 27	5U4G	Inf.	6.5KΩ	Inf.	75Ω	Inf.	70Ω	Inf.	6.5KΩ	
V 28	12JP4	0Ω	650KΩ	PIN 10 190KΩ	PIN 11 80KΩ	PIN 12 .1Ω				

* Do not measure.
† Measured from pin 8 of V27.
‡ Taken in FM position.

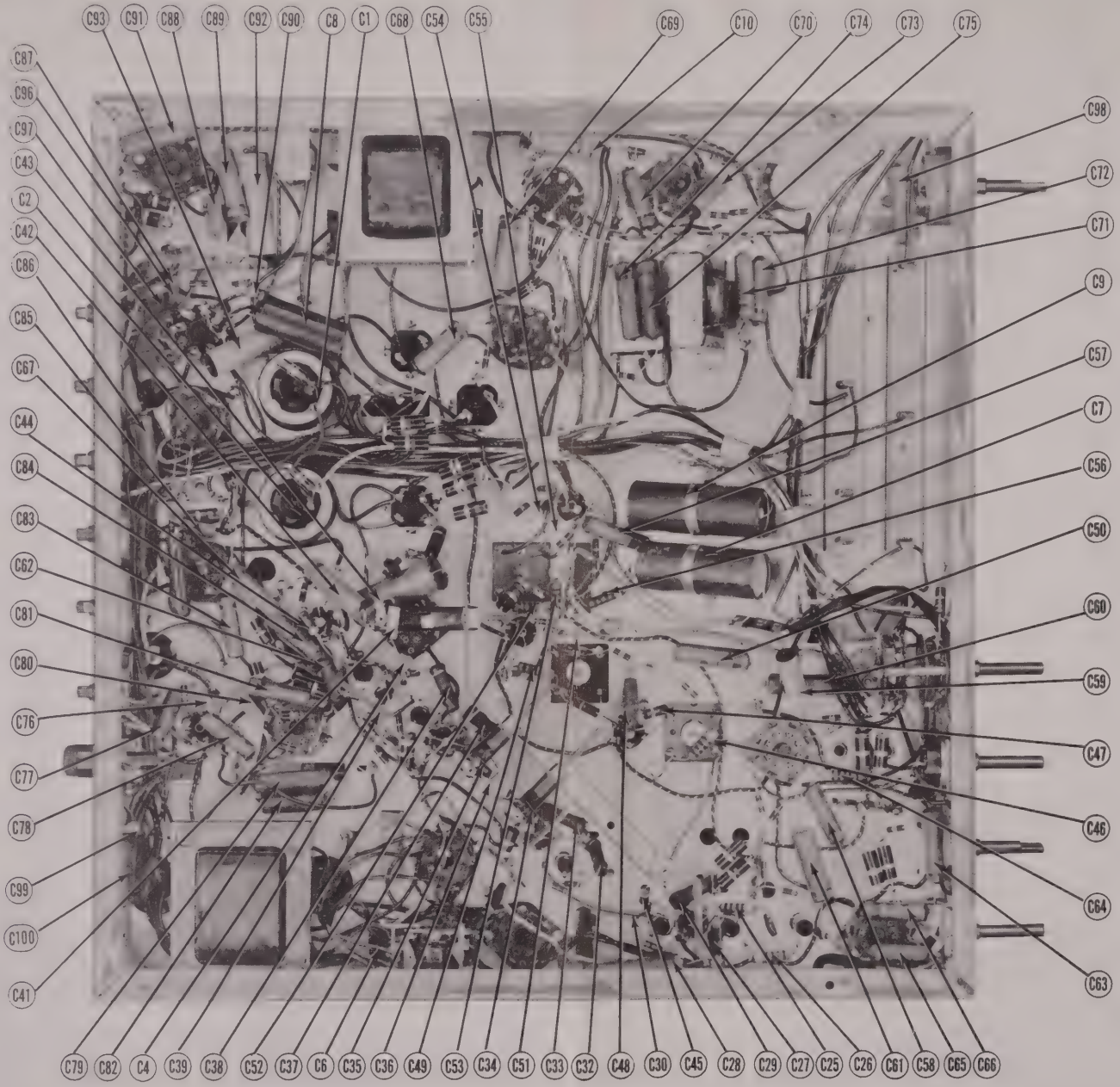
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.



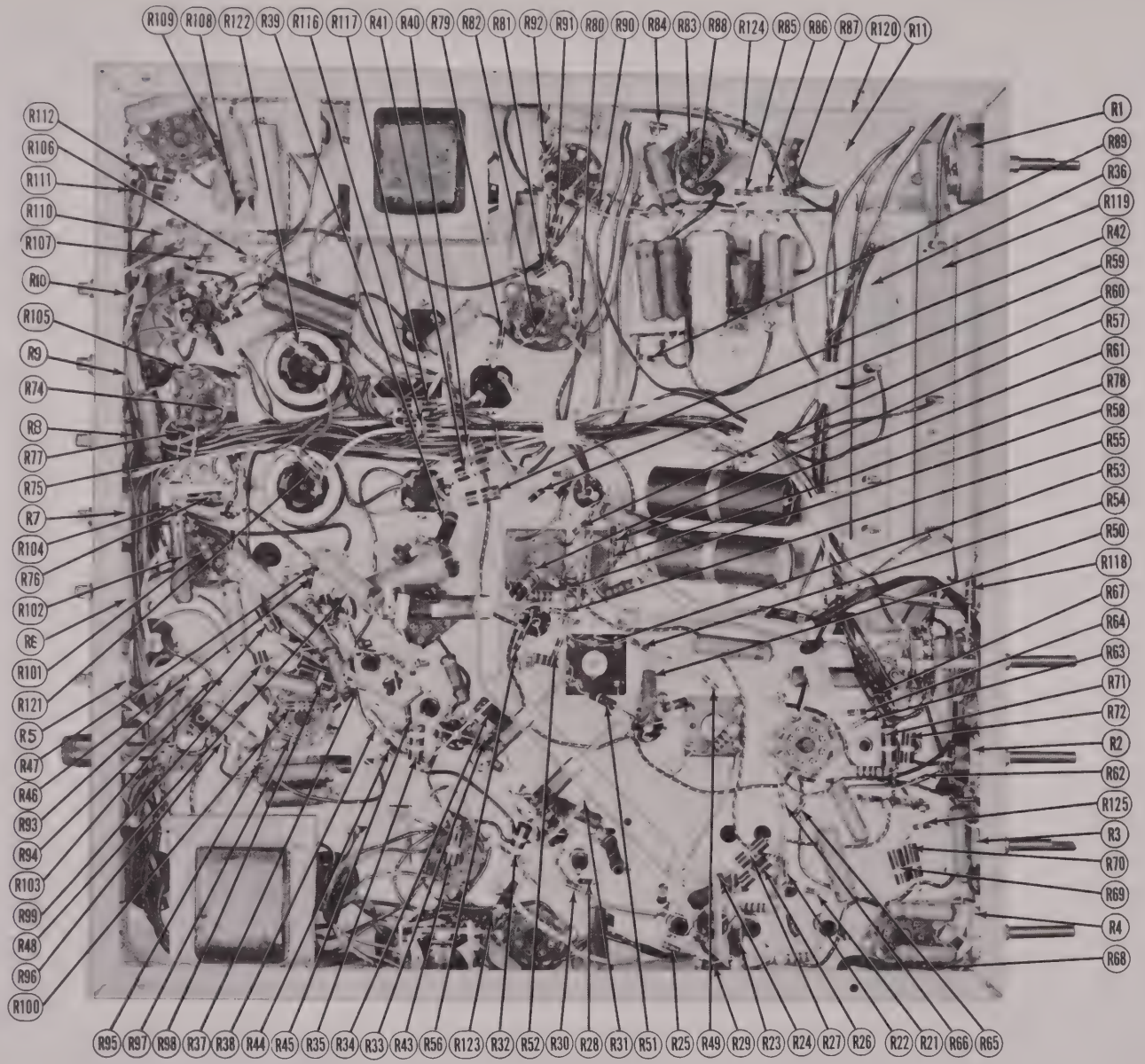
RF TUNER-LEFT SIDE



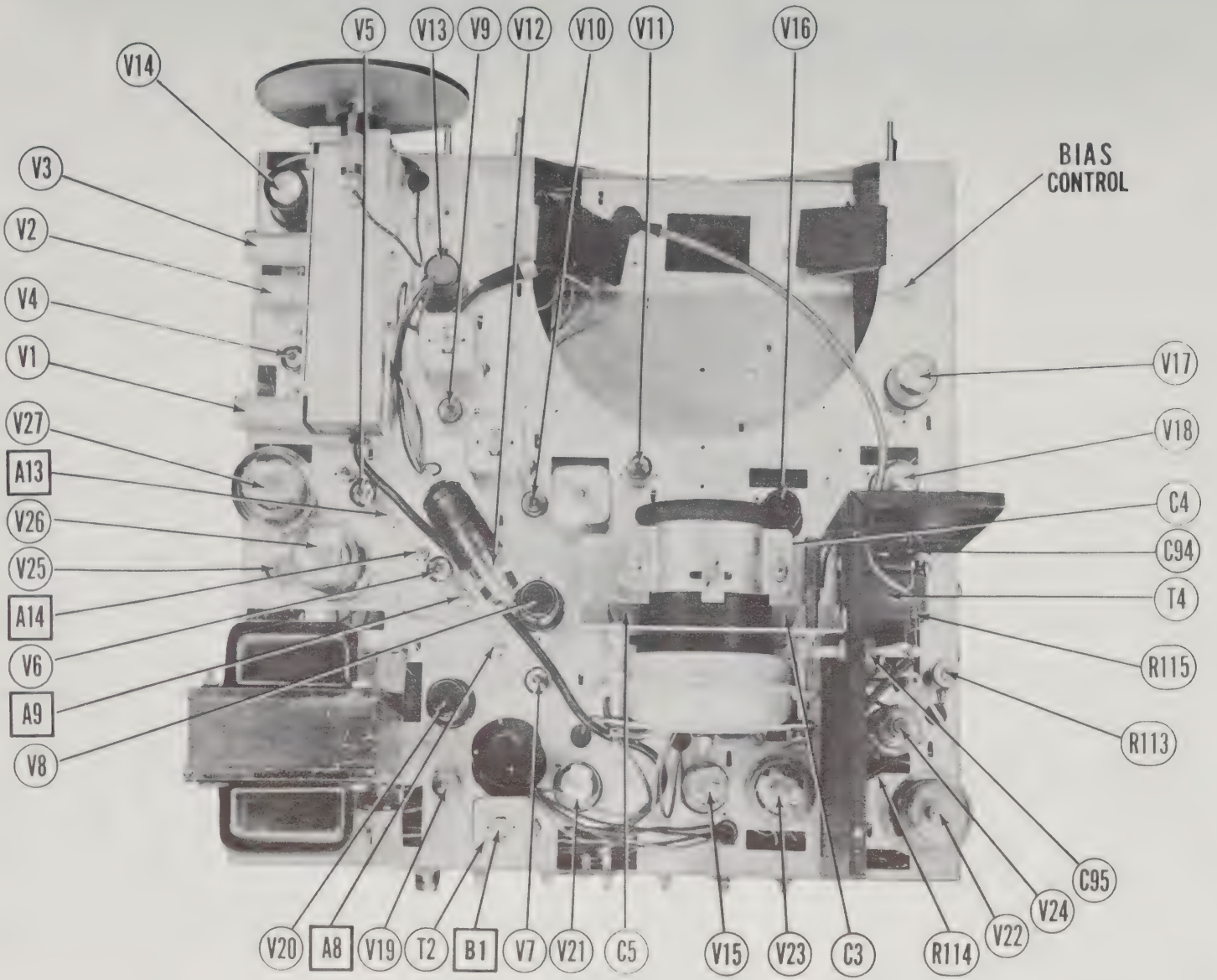
INDUCTUNER-TOP VIEW



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



CHASSIS–TOP VIEW

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	R-F Amp.	6AU6	6AU6	7BF	
V2	Mixer	6AL5	6AL5	7BD	
V3	Osc. Triode	6C4	6C4	7AF	
V4	1st Video IF	6AU6	6AU6	7BD	
V5	2nd Video IF	6AU6	6AU6	7BD	
V6	3rd Video IF	6AU6	6AU6	7BD	
V7	Video Det.-2nd Video Amp.	6AL5	6AL5	6BT	
V8	Video Amp.	6AC7	6AC7	7BA	
V9	1st Sound IF	6AU6	6AU6	7BD	
V10	Limiter	6AL5	6AL5	7BA	
V11	Discriminator	6AL5	6AL5	6BT	
V12	Tuning Indicator	6AL5T	6AL5T	8CH	
V13	A-F Amp.	6SC7	6SC7	9AG	
V14	Audio Output	6V6GT	6V6GT	7AC	
V15	Sync. Clipper-Sync. Sep.	6BA6	6BA6	7BD	
V16	Sync. Disch.	6SN7GT	6SN7GT	9BD	
V17	Sync. Clipper-Sync. Sep.	6SC7	6SC7	9N	
V18	Vert. Sync. & Vert. Osc. & Disch.	6SN7GT	6SN7GT	9BD	
V19	Vert. Amp.	6SN7GT	6SN7GT	9BD	
V20	Hor. Sync. Disc.	6AL5	6AL5	6BT	
V21	Hor. AFC	6AC7	6AC7	9N	
V22	Hor. Osc.	6N6GT	6N6GT	7S	
V23	Hor. Output	6BG6G	6BG6G	9BT	
V24	Damper	5V4G	5V4G	5L	
V25	H.V. Rect.	1B3GT	1B3GT	3C	
V26	Time Delay Rect.	6AL5	6AL5	6BT	
V26	LV Rect.	5U4G	5U4G	5T	
V27	LV Rect.	5U4G	5U4G	5T	
V28A	Picture Tube	12JP4	12JP4	12D	Used in model 9-407
B	Picture Tube	12KP4	12KP4	12D	Used in model 9-407M-2
C	Picture Tube	12LP4	12LP4	12D	Used in model 9-407M-1

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1	80	350	W-160039	AF16J	UP8045			TVL-6417	Filter
C2	80	350	W-160039	AF16J	UP8045			TVL-6417	Filter
C3A	40	475	B-160549	AFH8KBI	UP9BJ			TVL-20	▲ Filter
B	40	400			955				▲ Filter
C4A	30	450	W-160074	AF2222J†	UP1111			TVL-69	▲ Vert. Osc. Plate Dec.
B	10	450			451				▲ Output Decoupling
C5A	10	350	W-160076	AF2222J	UP1111			TVL-34	▲ V. Amp. Screen Bypass ◪ Low Pass Filter
B	10	350			45				▲ Sync. Clip Plate Dec.
C	10	300							3rd V. IF Decoupling
D	10	300							Filter
C6	4	150	W-160036	PRS150/4	BR415			UT-41	Bias Filter
C7	500	25	W-160071	PRS25/500	BRH255			TVA-10	Hor. Cent. Cont. Bypass
C8	100	25	W-160073	PRS25/100	BRH251A			TVA-8	Vert. Cent. Cont. Bypass
C9	1.5@ 60V @ 60V	4	W-160070	PRS4/2000	BRH620			TVL-43	Vert. Cent. Cont. Bypass
C10	25	50	W-160075	PRS50/25	BR255			TVA-15	Vert. Output Cath. Byp.
C11	470	500	W-160633-20	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Coupling
C12	470		W-160082	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Fil. Bypass
C13	470		W-160082	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Bypass
C14	15		W-160080			GP1K-15		MS-415	RF Coupling
C15	2-12		W-160247			TS2A-N500-2-12			Fixed Padder
C16	2-12		W-160247			TS2A-N500-2-12			Fixed Padder
C17	15		W-160080			GP1K-15		MS-415	RF Coupling
C18	470		W-160082	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Mixer Fil. Bypass
C19	470		W-160082	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Mixer Screen Bypass
C20	470	500	W-160633-20	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	RF Bypass
C21	1		W-137399-2	1468-000001					Osc. Coupling
C22	2-12		W-160247			TS2A-N500-2-12			Fixed Trimmer
C23	5		W-160084	1468-000005	5W5V5	NPOK-5	MO.5-55	MS-55	Osc. Grid Cap.
C24	470	500	W-160633-20	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Osc. Fil. Bypass
C25	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Mixer Plate Decoup.
C26	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	IF Coupling
C27	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	Bias Filter
C28	.25	200	39001-97	P488-25	GT2P25		ST-2-25	TC-2	" "
C29	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	1st V. IF Screen Byp.
C30	2		AW-160518						IF Coupling
C31	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	IF Coupling *
C32	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	Bias Filter
C33	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	2nd V. IF Screen Byp.
C34	20		W-160037		SR5x2	NPOK-20	MOS.5-42	MS-42	Fixed Trimmer
C35	10		W-160053	1469-00001	5R5x1	NPOK-10	MOS.5-41	MS-41	" "
C36	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	IF Coupling
C37	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	3rd IF Cath. Bypass
C38	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	3rd IF Screen Bypass
C39	1.6		AW-160402						IF Coupling
C40	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Diode Filter
C41	47		W-160061	1469-00005	5R5S5	NPCM-50	MOS.5-45	MS-45	Fixed Trimmer
C42	.05	400	39001-17	P488-05	GT4S5		ST-4-05	TM-15	Video Coupling
C43	.5	400	39001-23	484-5	GT4P5		ST-4-5	TC-5	" "
C44	270		W-160079	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	DC Res. Diode Filter

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C45	2.5		W-160078						S. IF Coupling
C46	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	AVC Filter
C47	2.5		W-160068						Fixed Trimmer
C48	4700	400	W-160634-14	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st S. IF Screen Byp.
C49	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	1st S. IF Decoupling
C50	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	AVC Filter
C51	47		W-160109	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	" "
C52	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Limiter Screen Byp.
C53	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Limiter Decoupling
C54	47		W-160109	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Bypass
C55	47		W-160109	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Bypass
C56	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	De-emphasis
C57	.01	400	39001-13	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tuning Ind. Filter
C58	.01	400	39001-13	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tone Comp.
C59	.02	400	39001-80	P488-02	GT4S2		ST-4-02	TM-12	Audio Coupling
C60	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	Bias Filter
C61	.1	400	39001-19	P488-1	GT4P1		ST-4-1	TM-1	AF Screen Bypass
C62	6800		W-160067	1467-008	1D3D7	GP2-335-0075	MW.3-27	1FM-27	RF Bypass
C63	.05	400	39001-17	P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C64	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Decoupling
C65	.002	600	W-160643-3	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Output Grid Bypass *
C66	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Output Plate Bypass
C67	.01	400	39001-13	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Sync. Coupling
C68	.05	200	39001-17	P288-05	GT2S5		ST-4-05	TM-15	Sync. Coupling
C69	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	Sync. Clip. Screen Byp.
C70	.01	600	39001-13	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Sync. Coupling
C71	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Integrator Net.
C72	.01	400	39001-13	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	" "
C73	.01	400	160643-4	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Vert. Osc. Grid Cap.
C74	.1	400	1-1643-5	P488-1	GT4P1		ST-4-1	TM-1	Vert. Discharge
C75	.1	400	39001-19	P488-1	GT4P1		ST-4-1	TM-1	Vert. Coupling
C76	47		W-160035	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Sync. Coupling
C77	.01	400	W-160643-4	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Fixed Trimmer
C78	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	AFC Filter
C79	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	" "
C80	10000	300	W-160635-16	1467-01	1D3S1	GP2-335-01	MW.3-11	1FM-11	Phase Shifter
C81	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	AFC Coupling
C82	.05	200	39001-17	P288-05	GT2S5		ST-4-05	TM-15	Hor. AFC Screen Byp.
C83	.005	600	39001-11	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Hor. Osc. Grid Cap.
C84	.05	400	39001-17	P488-05	GT4S5		ST-4-05	TM-15	Hor. Osc. Screen Byp.
C85	330	500	W-160632-26						Differentiator Net.
C86	.01	400	39001-13	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Hor. Sync. Coupling
C87	680	500	W-160634-3	1479-0007	2R5T7		MW5-37	1FM-37	Hor. Discharge
C88	1000	500	W-160634-5	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Hor. Coupling
C89	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	Hor. Amp. Cath. Byp.
C90	1000		W-160034	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Bias Filter
C91	.05	400	39001-17	P488-05	GT4S5		ST-4-05	TM-15	Hor. Amp. Screen Byp.
C92	.035	1000	W-160643-1	P1088-033				Damper Filter	
C93	.05	1000	W-160643-2	P1088-05	GT16S5		STM-10-05	TR-15	" "
C94	220	1500	W-160111						Fixed Trimmer
C95	500	10000	B-137477-1			410-500			HV Filter
C96	.01	600	39001-13	P688-01	GT6S1		ST-6-01	TM-11	Acc. Anode Bypass
C97	.1	200	39001-19	P288-1	GT2P1		ST-2-1	TM-1	Pic. Tube Cath. Dec.
C98	.1	400	39001-19	P488-1	GT4P1		ST-4-1	TM-1	Hor. Cent. Bypass
C99	.05	600	39001-17	P688-05	GT6S5		MPH-6-05	TM-15	Line Filter
C100	.05	600	39001-17	P688-05	GT6S5		MPH-6-05	TM-15	" "

* Not used in all models.
† Parallel section to obtain desired capacity.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
R1	1000Ω	.25	W-160091-2		FW25-1000	Focus control (Wire Wound)
R2A	500KΩ	½	W-160031	Q19-133X	AT-82	Volume control
B	Shaft			Not Req.	RS-2	Attach to R2A per instructions
C	Switch			76-1	SW-A	" " "
R3A	100KΩ	½	W-160092-2	Q11-129	AM-46-S	Brightness control
B	Shaft			Not Req.	KS-2	Attach to R3A per instructions
R4A	25KΩ	½	W-160032	Q11-120	AM-40-S	Contrast control
B	Shaft			Not Req.	RS-2	Attach to R4A per instructions
R5	25Ω	2	W-160095-1	W-25	43-25	Vertical centering control (Wire Wound)
R6	25Ω	4	W-160089		10-25	Horiz. centering control (Wire Wound)
R7	1500Ω	2	W-160087		43-1500	Vert. linearity control (Wire Wound)
R8A	500KΩ	½	W-160094-2	Q11-133	M-58-S	Vert. hold control
B				Not Req.	S4	Attach to R8A per instructions
R9A	2 Meg.	½	W-160094-3	Q11-139	M-334-S	Vert. size control
B	Shaft			Not Req.	SQ	Attach to R9A per instructions
R10A	20KΩ	½	W-160094-1	Q11-119	M-36-S	Horiz. drive control
B	Shaft			Not Req.	SQ	Attach to R10A per instructions
R11A	500KΩ	½	W-160088	Q11-133	M-58-S	Picture Tube Bias Control
B	Shaft			S4	Not Req.	Attach to R11A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED	
R12	200Ω	½	39375-32		RF Cathode	5%
R13	10KΩ	2	39374-213		RF Plate	
R14	12KΩ	½	39374-38		RF Coil Shunt	
R15	12KΩ	½	39374-38		Mixer Coil Shunt	
R16	1 Meg.	½	39374-61		Mixer Grid	
R17	47Ω	½	39374-9		Mixer Cathode	
R18	330KΩ	½	39374-55		Mixer Screen	
R19	12KΩ	½	39374-38		Osc. Grid	
R20	10KΩ	2	39374-213		Osc. Plate	
R21	8200Ω	½	39375-71		Mixer Plate Transformer Shunt	5%
R22	47KΩ	½	39374-45	BTS-47K	Mixer Plate Decoupling	
R23	5600Ω	½	39375-67		1st Video IF Grid	
R24	68Ω	½	39374-11		1st Video IF Cathode	
R25	6800Ω	½	39375-69		1st Video IF Transformer Shunt	5%
R26	22KΩ	2	39374-217		1st Video IF Plate	

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: CROSLEY PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES	
R27	22KΩ	2	39374-217		1st Video IF Plate	
R28	10KΩ	½	39374-37	BTS-10K	Bias Network	
R29	1 Meg.	½	39374-61	BTS-1 Meg.	Bias Network	20%
R30	6800Ω	½	39375-69		2nd Video IF Coil Shunt	5%
R31	68Ω	½	39374-11		2nd Video IF Cathode	
R32	39000Ω	2	39374-208	BT-2-3900	2nd Video IF Decoupling	
R32	6800Ω	½	39375-63		3rd Video IF Coil Shunt	5%
R34	10Ω	½	39374-13		3rd Video IF Cathode	
R35	3900Ω	2	39374-208	BT-2-3900	3rd Video IF Decoupling	
R36A	7000Ω	7		AB-7000	Bleeder (Wire Wound)	
B	25000Ω	10	W-160195	AB-25000	Filter (Wire Wound)	
C	6KΩ	2		BW-2-62	Voltage Divider (Wire Wound)	
R37	30KΩ	½	39375-87		Video Det. Coil Shunt	5%
R38	4700Ω	½	39375-65	BTS-4700-5%	Video Amp. Grid	5%
R39	3900Ω	½	39375-358	BTS-3900-5%	Video Amp. Plate	5%
R40	100KΩ	½	39374-225	BT-2-100K	Video Amp. Screen	
R41	100KΩ	2	39374-225	BT-2-100K	Video Amp. Screen	
R42	4300Ω	2	39374-207	BW-2-4300	Filter	
R43	120Ω	2	39374-10	BW-2-120	Voltage Divider	
R44	15Ω	½	39374-3	BW-½-15	" "	
R45	22Ω	½	39374-5	BW-½-22	" "	
R46	10KΩ	½	39374-37	BTS-10K	DC Restorer Diode Load	
R47	470KΩ	½	39374-57	BTS-470K	Picture Tube Grid	
R48	150KΩ	½	39374-51	BTS-150K	Voltage Divider	
R49	100KΩ	½	39374-49		1st Sound IF Grid	
R50	6Ω	1	39374-11		1st Sound IF Cathode	
R51	33KΩ	1	39374-131	BTA-33K	1st Sound IF Screen	
R52	1000Ω	½	39374-25	BTS-1000	1st Sound IF Decoupling	
R53	56KΩ	½	39374-46		2nd Sound IF Grid	
R54	100KΩ	½	39374-49	BTS-100K	1st Sound IF Grid Filter	
R55	6Ω	1	39374-11		2nd Sound IF Cathode	
R56	10KΩ	2	39374-37	BTS-10K	Voltage Divider	
R57	47KΩ	2	39374-221	BT-2-47K	2nd Sound IF Screen	
R58	1000Ω	½	39374-25	BTS-1000	2nd Sound IF Decoupling	
R59	100KΩ	½	39374-49	BTS-100K	Discriminator Load	
R60	100KΩ	½	39374-49	BTS-100K	" "	
R61	27KΩ	½	39374-42	BTS-27K	De-emphasis	
R62	22KΩ	½	39374-41	BTS-22K	Tone Compensation	
R63	470KΩ	½	39374-57	BTS-470K	1st AF Grid	
R64	100KΩ	½	39374-49	BTS-100K	1st AF Plate	
R65	1 Meg.	½	39374-61	BTS-1 Meg.	1st AF Screen	
R66	100KΩ	½	39374-49	BTS-100K	Voltage Divider	
R67	470KΩ	½	39374-57	BTS-470K	Bias Network	
R68	100KΩ	½	39374-49	BTS-100K	Output Grid	
R69	2200Ω	2	39374-205	BW-2-2200	Filter	
R70	2200Ω	2	39374-205	BW-2-2200	Filter	
R71	8200Ω	2	39374-212	BT-2-8200	Voltage Dropping	
R72	8200Ω	2	39374-212	BT-2-8200	" "	
R73	3300Ω	½		BTS-3300	Tuning Ind. Grid	
R74	39KΩ	½	39374-44	BTS-39K	Sync. Clipper Grid	
R75	3300Ω	½	39374-31	BTS-3300	Sync. Clipper Plate	
R76	33KΩ	2	39374-219	BT-2-33K	Filter	
R77	6800Ω	2	39374-35	BTS-6800	Voltage Divider	
R78	1 Meg.	2	39374-61	BTS-1 Meg.	Tuning Indicator Network	
R79	1.2 Meg.	2	39374-63	BTS-1.2 Meg.	Sync. Clipper Grid	
R80	10KΩ	2	39374-37	BTS-10K	Sync. Clipper Plate	
R81	100KΩ	1	39374-137	BTA-100K	Sync. Clipper Screen	
R82	22KΩ	½	39374-41	BTS-22K	Voltage Divider	
R83	1.2 Meg.	½	39374-63	BTS-1.2 Meg.	Vert. Buffer Grid	
R84	6800Ω	½	39374-35	BTS-6800	Vert. Buffer Cathode	
R85	10KΩ	½	39374-37	BTS-10K	Integrator	
R86	10KΩ	½	39374-37	BTS-10K	"	
R87	10KΩ	½	39374-37	BTS-10K	Vert. Buffer Plate	
R88	560KΩ	½	39374-58	BTS-560K	Vert. Osc. Grid	
R89	470KΩ	½	39374-57	BTS-470K	Vert. Osc. Plate	
R90	3900Ω	½	39374-32	BTS-3900	Vert. Peaking	
R91	820Ω	1	39374-112	BTA-820	Vert. Amp. Cathode	
R92	2.2 Meg.	½	39374-69	BTS-2.2 Meg.	Vert. Amp. Grid	
R93	470KΩ	½	39374-57	BTS-470K	Sync. Disc. Load	
R94	470KΩ	½	39374-57	BTS-470K	" "	
R95	470Ω	½	39374-21	BTS-470	Horiz. AFC Grid	
R96	470KΩ	½	39374-57	BTS-470K	AFC Filter	
R97	10Ω	½	39374-1	BW-½-10	Horiz. AFC Cathode	
R98	22KΩ	2	39374-217	BT-2-22K	Horiz. AFC Plate	
R99	47KΩ	2	39374-221	BT-2-47K	Horiz. AFC Screen	
R100	27KΩ	1	39374-130	BTA-27K	Voltage Divider	
R101	47KΩ	½	39374-45	BTS-47K	Horiz. Osc. Grid	
R102	5000Ω	10	W-160104-16	AB-5000	Horiz. Osc. Plate (Wire Wound)	
R103	10KΩ	1	39374-125	BTA-10K	Horiz. Osc. Screen	
R104	6800Ω	½	39374-35	BTS-6800	Differentiator	
R105	220KΩ	½	39374-53	BTS-220K	Horiz. Discharge Grid	
R106	680KΩ	½	39374-59	BTS-680K	Horiz. Discharge Plate	
R107	10KΩ	½	39374-37	BTS-10K	Horiz. Peaking	
R108	470KΩ	½	39374-57	BTS-470K	Horiz. Output Grid	
R109	100Ω	½	39374-13		Parasitic Suppressor	
R110	100Ω	5	W-160007-3	AB-100	Horiz. Output Cathode (Wire Wound)	
R111	27KΩ	2	39374-218	BT-2-27K	Horiz. Output Screen	
R112	22KΩ	2	39374-217	BT-2-22K	" "	
R113	6KΩ	25	W-160258		Damper Filter See Note 3 (Wire Wound)	
R114	5.6Ω	½	39303-17	BW-½-5.6	HV Filament	
R115	680KΩ	1	39374-141		HV Filter	
R116	10KΩ	2	39374-213	BT-2-10K	Filter	
R117	10KΩ	2	39374-213	BT-2-10K	"	
R118	330Ω	1	39374-107	BTA-330	Bias Network	
R119A	200Ω	12	W-160104	DG-200	Series Focus Coil	
B	250Ω	8		AB-250	Focus Coil Shunt Wire Wound	
R120	1250Ω	24	W-160199	DHA-1250	Filter (Wire Wound)	
R121	100KΩ	1	39374-137	BTA-100K	Filter	
R122	100KΩ	1	39374-137	BTA-100K	"	
R123	2.2Ω	1	39304-8	BW-1-2.2	Time Delay Rect. Filament Wire Wound	
R124	470KΩ	½	39374-57	BTS-470K	Voltage Divider	
R125	220KΩ	½	39374-53	BTS-220K	" "	
R126	1250Ω	10	B-137201-6	AB-1250	Focus Coil Shunt See Note 1	
R127	22KΩ	2	39374-41	BT-2-22K	Voltage Divider See Note 2	

Note 1. Used only when using 12KP4 or 12LP4 picture tubes.
Note 2. Used only when using 12LP4 picture tube.
Note 3. Tap at 5000Ω not used.

CROSLEY
MODELS 9-407, 9-407M-1, 9-407M-2

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	CROSLEY PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ 2.6A	760VCT @ .320 ADC 55VAC Tap. SEC. 4 6.3VAC @ 9.0A	5VAC 6A	5VAC 2A	D-160011	P-8152#		

Drill new mounting holes. Use dropping resistor to obtain 55V from one side of HV winding.

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING DC RESISTANCE PRI.	SEC.	REPLACEMENT DATA CROSLEY PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	NOTES
T2	68Ω Tap @ 38Ω	68Ω Tap @ 21Ω	AC-160009-1				Hor. Osc. Trans.
T3	290Ω	740Ω SEC. 2 600Ω	D-160015-2				Vert. Block Osc.Trans.
T4	430Ω Tap @ 180Ω	SEC. 1 10.5Ω Tap @ .5Ω SEC. 2 0Ω	W-160201	A-8117	TFB-1		Hor. Output Trans.
T5	575Ω	7Ω	W-160200	A-8115	TSO-1	A-3035	Vert. Output Trans.
T6A	15Ω		AB-160455	DY-1			Hor. Deflection Coil
B	62Ω						Vert. Deflection Coil
T7	525Ω		AB-160365				Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING IMPEDANCE PRI.	SEC.	DC RES. PRI.	SEC.	REPLACEMENT DATA CROSLEY PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
T8	5000Ω	3.1Ω	315Ω	.4Ω	138131-2	A-3849	RO-303	A-2902	

FILTER CHOKE

ITEM No.	RATINGS TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ~)	REPLACEMENT DATA CROSLEY PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	INSTALLATION NOTES
L1	.310A	98Ω	4 Henry	C-160014	C-2326#			# Drill new mounting holes.

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	SEC.	REPLACEMENT DATA CROSLEY PART No.	MEISSNER PART No.	NOTES
L2	Ant. Input	0Ω		AW-160018		
L3	RF End Inductor	0Ω		AW-160218		
L4	RF Plate	0Ω				Part of C-160308
L5	Mixer End Inductor	0Ω		AW-160225		
L6	Mixer Grid	0Ω				Part of C-160308
L7	Osc. End Inductor	0Ω		AW-160217		
L8	Oscillator	0Ω				Part of C-16038
L9	Osc. Shunt	0Ω		AW-160054		
L10A	1st Video IF	.7Ω		AW-160512		Used in sets having molded type minature tube socket.
B	1st Video IF			AW-160155		Used in sets having wafer type minature tube socket.
L11	RF Choke	0Ω		AW-160020		
L12A	1st Video IF Coupling	.7Ω		AW-160513		Used in sets having molded type minature tube socket.
B	1st Video IF Coupling			AW-160155		Used in sets having wafer type minature tube socket.
L13A	2nd Video IF	.7Ω		AW-160512		Used in sets having molded type minature tube sockets.
B	2nd Video IF			AW-160163		Used in sets having wafer type minature tube sockets.
L14A	2nd Video IF	.7Ω		AW-160513		Used in sets having molded type minature tube sockets.
B	2nd Video IF			AW-160155		Used in sets having wafer type minature tube sockets.
L15A	3rd Video IF	.7Ω		AW-160512		Used in sets having molded type minature tube sockets.
B	3rd Video IF			AW-160163		Used in sets having wafer type minature tube sockets.
L16	21.9MC Sound Trap	0Ω		AW-160159		
L17	Adjacent Channel Sound Trap	.1Ω		AW-160159		
L18A	3rd Video IF	.7Ω		AW-160513		Used in sets having molded type minature tube sockets.
B	3rd Video IF			AW-160161		Used in sets having wafer type minature tube sockets.
L19A	4th Video IF	.7Ω		AW-160512		Used in sets having molded type minature tube sockets.
B	4th Video IF			AW-160163		Used in sets having wafer type minature tube sockets.
L20A	4th Video IF	.7Ω		AW-160512		Used in sets having molded type minature tube sockets.
B	4th Video IF			AW-160163		Used in sets having wafer type minature tube sockets.
L21	Peaking	15.5Ω		AW-160023-3		
L22	Peaking	18.5Ω		AW-160023-2		
L23	4.5MC Trap	1.5Ω		AW-160160		
L24	Peaking	10Ω		AW-160023-1		

PARTS LIST CONTINUED ON PAGE 19

COILS (RF-IF) CONT.

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L25	1st Sound IF Trans.	0Ω	0Ω	AC-160008		
L26	2nd Sound IF Trans.			AC-160008		
L27	Disc. Trans.	.5Ω	0Ω	AC-160010		
L28	Hor. Linearity Control	37Ω		AW-160281		
L29	Hor. Size Control	.2Ω		AW-160238		
L30	Coupling Choke					Used in early production sets.

SPEAKER

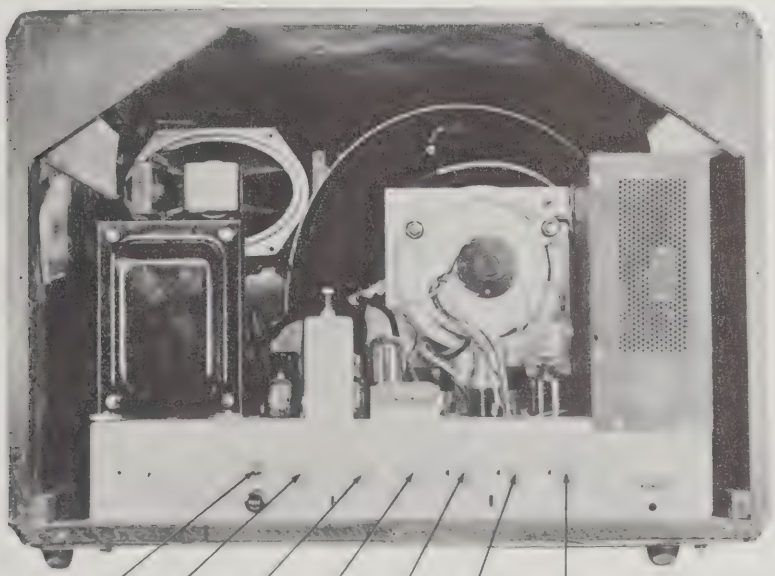
ITEM No.	RATING FIELD RES.	RATING V. C. IMP.	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA JENSEN PART No.	REPLACEMENT DATA QUAM PART No.	NOTES
SP1	PM	3.1Ω	145087		57A15	
	CONE DIA.	V. C. DIA.				
SP2	4 3/4" x 7"	3/4"				

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA CROSLEY PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	.25	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	CROSLEY PART No.	NOTES
M2	Tuner Assembly	AW-160025	Complete
M3	Fuse	W-160117-10	3 Amp.
M4	Relay	W-160044	Armature, SPST.
M5	Band SW	B-160022	
M6	Vertical Positioning SW.	W-160196	Toggle, DPDT.
M7	Ion Trap	W-144315	Model 9-407M-1
	Iron Core	39012-94	For L209, L222
	Iron Core	39012-93	For L219
	Iron Core	39012-92	For L220
	Iron Core	39013-91	For L216
	Iron Core	W-160426	For L204, L207, L210, L212, L208, L201, L203, L206,
	Iron Core	39012-85	For Z201, Z202, Z203.
	Iron Core	39012-95	For Z204
	Magnet	W-135723	Hor. Output Oscillation Damping magnet.
	High Voltage Cable and Connector	AW-160510	
	Bank Panel	AD-160392	Includes Power Cable, For Models 9-407, 9-407M-2
	Back Panel	AD-160504	Includes Power Cable, For Models 9-407M-1
	Knob	B-160488-1	Small (Plain)
	Knob	B-160488-2	Small (With Indicator Line)
	Knob Assembly	AB-160391	Large
	Mask	R-160050-2	For Models 9-407
	Mask	R-160473	For Models 9-407M-1, 9-407M-2
	Safety Glass	B-150166-1	



CABINET-REAR VIEW

DISASSEMBLY INSTRUCTIONS

1. Remove six push-on type control knobs.
2. Disconnect speaker plug.
3. Remove tuning indicator tube from holder.
4. Remove four 7/16" hex head bolts holding chassis. Remove chassis.
5. Remove four 11/32" hex nuts holding speaker. Remove speaker.

HORIZONTAL FREQUENCY ADJUSTMENT

If the picture does not remain in"sync" horizontally turn the horizontal hold adjustment (B1) and determine the two extreme positions where the picture drops into "sync"-not out of synchronization. Set B1 midway between these two positions.

Turn the horizontal centering control until the raster is positioned correctly horizontally. Decrease the contrast control and increase the brightness so the entire raster is visible including the area to the right which usually is blanked out. Adjacent to the right edge of the picture there should be a vertical gray strip about 1/4" wide at the right edge of the raster. Further to the right a darker strip may or may not be present. If this strip is over 3/16" wide or if the first lighter gray strip is not present the phasing is incorrect. If so, turn the phasing control (B2) until the left edge of the darker strip is at the extreme right edge of the raster almost to the disappearing point.

HORIZONTAL LINEARITY AND SIZE ADJUSTMENT

Adjust the horizontal size control (B3) so the picture width is the same as the picture frame opening.

Adjust the horizontal drive control for the best linearity of pattern on the right side of the picture. (This control is pre-set at the factory and normally should not require adjustment in the field.)

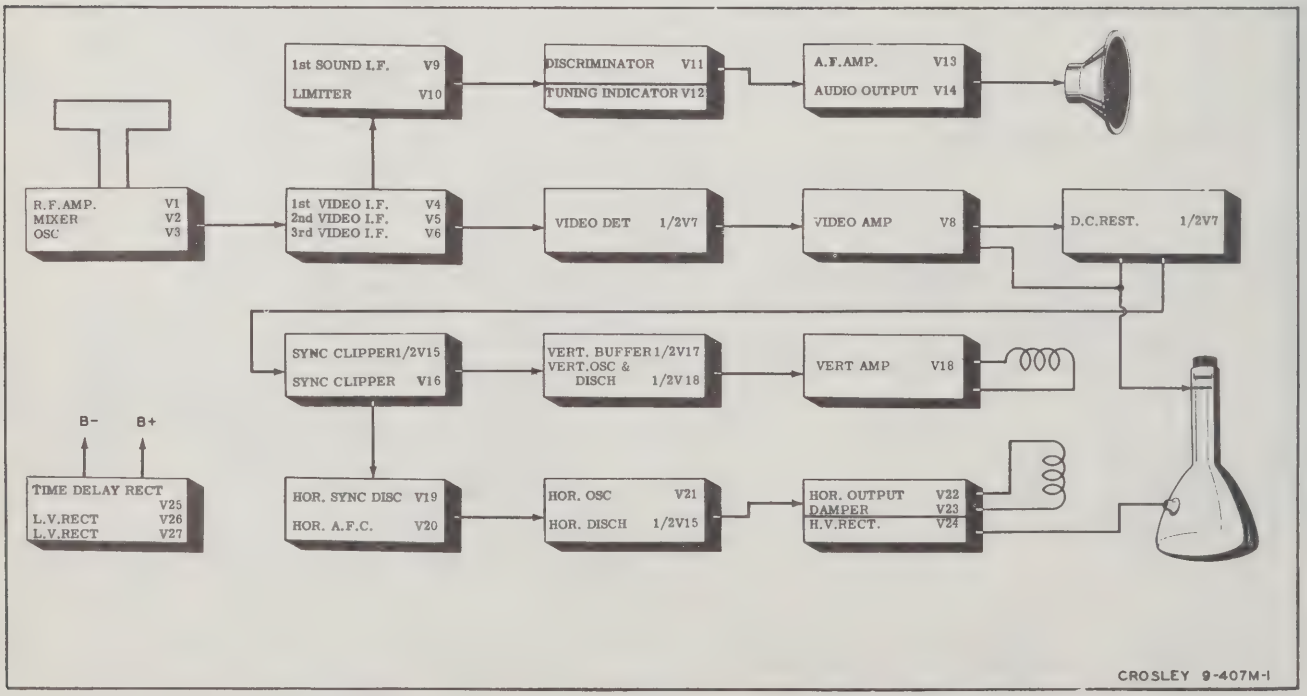
The horizontal linearity control (B4) affects the middle portions of the picture. Readjust the horizontal size control (B3) after the horizontal drive and linearity controls have been adjusted, if necessary.

BIAS CONTROL ADJUSTMENT

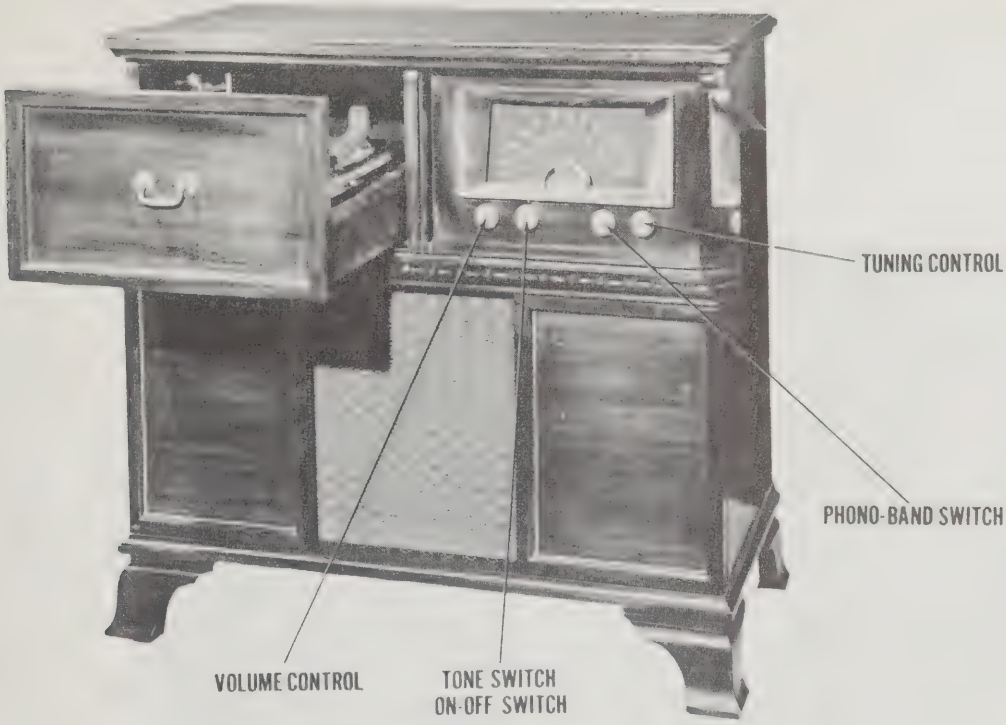
If the picture tube has been replaced, turn the contrast control fully counter-clockwise.

Turn the brightness control to the point where a VTVM reading of 50 volts is obtained between the brightness control "arm" and chassis.

Advance the bias control to the point where the raster just disappears.

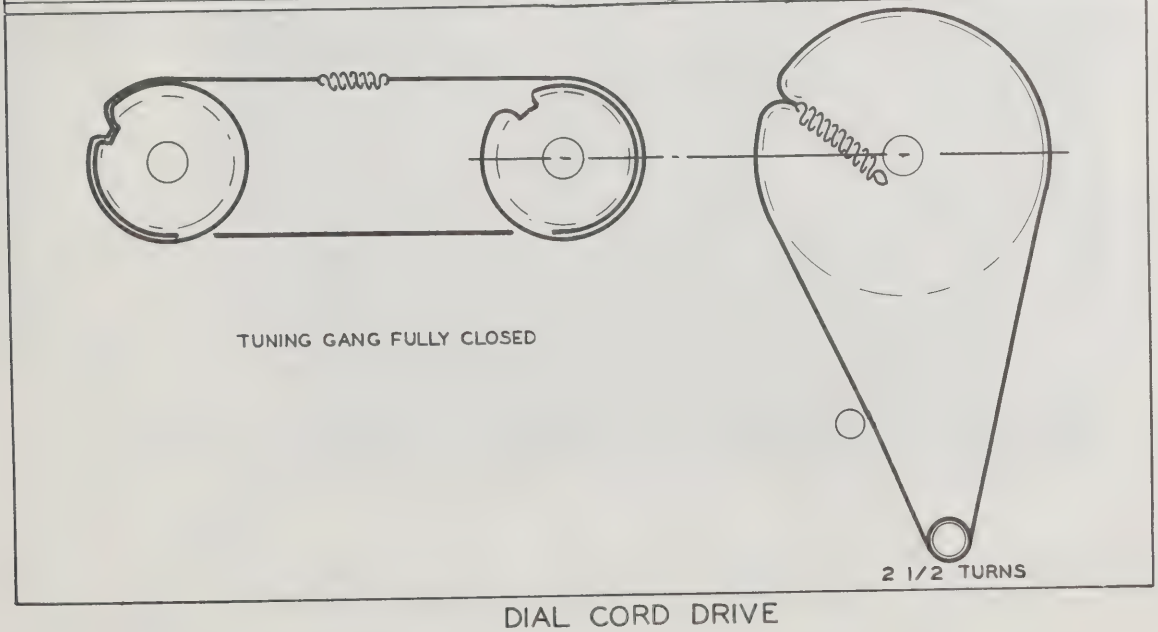


BLOCK DIAGRAM



DELCO MODEL R-1249

TRADE NAME	Delco, Models R-1248, R-1249, R-1250
SUPPLIER	United Motors Service, Div. of GMC, General Motors Bldg., Detroit 2, Michigan
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(TEN)	Types 6BA6 RF Amp., 6BA7 Converter, 6BA6 1st IF Amp., 6AU6 FM 2nd IF Amp., 6AL5 Ratio Det., 6SQ7 AM DET-AVC-AF, 6SN7GT Phase Inverter, (2) 6V6GT Power Output, 5Y3GT Rectifier.
POWER SUPPLY	105-125 Volts AC — RATING: .83 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	550-1600KC — FREQ. MOD. 88-108MC



DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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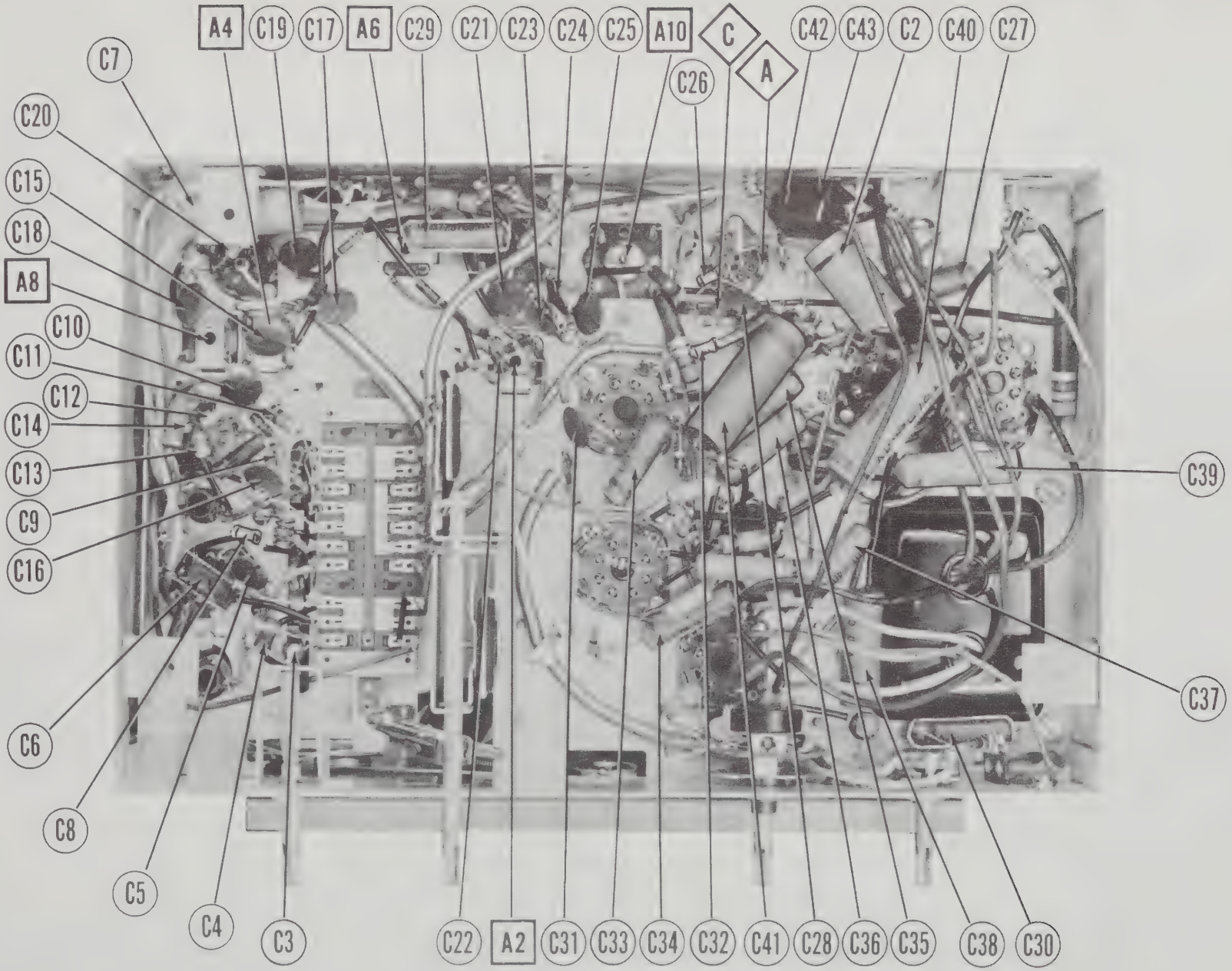
DATE 7/49 4914-7 SET #66 FOLDER #7

DELCO
MODELS R-1248, R-1249, R-1250

DELCO
MODELS R-1248, R-1249, R-1250


A4
C19
C17
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C7
C26
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R15
M5
L4
R11
R7
R8
L5
R6
L10
L11
L9
R4
R5
R3
L3
R2

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		DELCO PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BA7	6BA7		
V3	1st IF Amp.	6BA6	6BA6	7BK	
V4	2nd FM IF Amp.	6AU6	6AU6	7BK	
V5	Ratio Det.	6AL5	6AL5	6BT	
V6	DET-AVC-AF	6SQ7	6SQ7	8Q	
V7	Phase Inverter	6SN7GT	6SN7GT	8BD	
V8	Power Output	6V6GT	6V6GT	7AC	
V9	Power Output	6V6GT	6V6GT	7AC	
V10	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	DELCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	20	450	1218843	AF444J4A	UP		DY-403	EL-442	◓Filter
B	20	450			22245C				■Filter
C	20	450							▲Filter
D	20	25							Output Cath. Bypass
C2	5	50	1218842	PRS150/4	BR550		M-4-150	TA-55	Stabilizing Cap
C3	100		1217925	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C4	100		1217925	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C5	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Cath. Bypass
C6	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Screen Bypass
C7	.05	600	7236842	P688-05	GT6S5		ST-6-05	TM-15	AVC Filter
C8	10		1218328	1468-00001	5W5Q1	GP1K-10	MO.5-41	MS-41	RF Coupling
C9	15		1218845			GP1K-15		MS-415	Osc. Cath. Bypass
C10	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Anode Bypass
C11	33		1218348	1468-00004	5W5Q3	NPOL-33	MO.5-43	1FM-44	Osc. Grid Cap
C12	2		1219071						Osc. Feedback
C13	30		1219072		5R5Q3		MOS.5-43	MS-43	Fixed Trimmer Note
C14	10		1218328	1469-00001	5R5Q1	NPOK-10	MOS.5-41	MS-41	Fixed Trimmer
C15	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C16	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Conv. Fil. Bypass
C17	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C18	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AVC Filter
C19	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Screen Bypass
C20	10		1218328	1469-00001	5R5Q1	NPOK-10	MOS.5-41	MS-41	Fixed Trimmer
C21	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Decoupling
C22	5		1218408	1468-000005	5W5V5	NPOK-5	MO.5-55	MS-55	IF Coupling
C23	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Cath. Bypass
C24	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
C25	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Decoupling
C26	220		1218846	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	Diode Load Cap
C27	.002	600	7237836	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	De-emphasis
C28	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Audio Coupling
C29	.003	600	7257699	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Compensation
C30	.003	600	7257699	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Compensation
C31	5000		1218298	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Audio Coupling
C32	220		1218846	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	AF Plate Bypass
C33	.003	600	7257699	P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Audio Coupling
C34	.03	200	1218844	P488-03	GT4S3		ST-6-03	TM-13	Phase Inv. Cath. Bypass
C35	.005	600	7230767	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C36	.01	400	1209309	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C37	.01	400	1209309	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C38	.05	600	7230592	P688-05	GT6S5		ST-6-05	TM-15	Tone Compensation
C39	.004	1600	1217875	P1688-004	GT16D4		STM-16 -004	MB-24	Output Plate Bypass
C40	.2	200	7240579	P488-22	GT4P2		ST-4-2	68P18	Audio Feedback
C41	.2	400	1218776	P488-22	GT4P2		ST-4-2	68P38	AF Plate Decoupling
C42	.01	600	1217227	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Line Filter
C43	.01	600	1217227	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Line Filter

Note. Some Models Use 10MMF In This Application.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		DELCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	12KΩ CT	5Ω	395Ω	.2Ω	1218320	A-3852#	RO-110#	A-2936#	#Drill New Mtg. Holes

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			DELCO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.	1218320		12E60	
	650Ω	5Ω				
	CONE DIA.	V.C. DIA.				
SP2	11-7/16"	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	DELCO PART No.	MEISSNER PART No.	
L1	FM Dipole Ant.	0Ω		1218462		
L2	FM Ant.Coil	0Ω		1219075		
L3	RF Plate Choke	.2Ω		1218838		
L4	FM RF Coil	0Ω		1219074		
L5	RF Choke	0Ω				
L6	FM Osc.Coil	0Ω		1219073		Approx. 2½ Turns #22 Wire
L7	AM Loop Ant	1.8Ω		1218391		
L8	AM RF Coil	100Ω	6Ω	1218176		
L9	AM Osc.Coil	5Ω		1218171	14-1060	
L10	RF Choke	.2Ω		1218838		
L11	RF Choke	0Ω		1219145		
L12	FM 1st IF	1.5Ω	.5Ω	1218832		
L13	AM 1st IF	15Ω	15Ω	1218830	16-6678	
L14	FM 2nd IF	1.5Ω	.5Ω	1218832		
L15	AM 2nd IF	9Ω	9Ω	1218831		
L16	Ratio Det.	1Ω	.1Ω	1218813		
L17	Fil. Choke	.2Ω		1218319		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					DELCO PART No.		
M1	Bayonet	6-8V	0.15A	Brown	435433		Type #47
M2	Bayonet	6-8V	0.15A	Brown	435433		Type #47
M3	Bayonet	6-8V	0.2A	White	115273		Type #51

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA		REMARKS
	DELCO PART No.	ASTATIC PART No.	
M4		LT1-M	

MISCELLANEOUS

ITEM No.	PART NAME	DELCO PART No.	NOTES
M5	Switch	1218729	Band
M6	Switch	1218494	Tone-Power
M7	3 Gang Var. Cap.	1218801	(30-520MMF, 30-520MMF, 25-202MMF)
	Dial Scale	1218466	Glass
	Knob	1218229	
	Cabinet	1218452	Model R-1248
	Cabinet	1218453	Model R-1249
	Cabinet	1218854	Model R-1250

PARTS LIST AND DESCRIPTIONS (Continued)

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	DELCO PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	1 Meg	½	1218228	213-137X	AT-98	Volume control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R1A per instructions

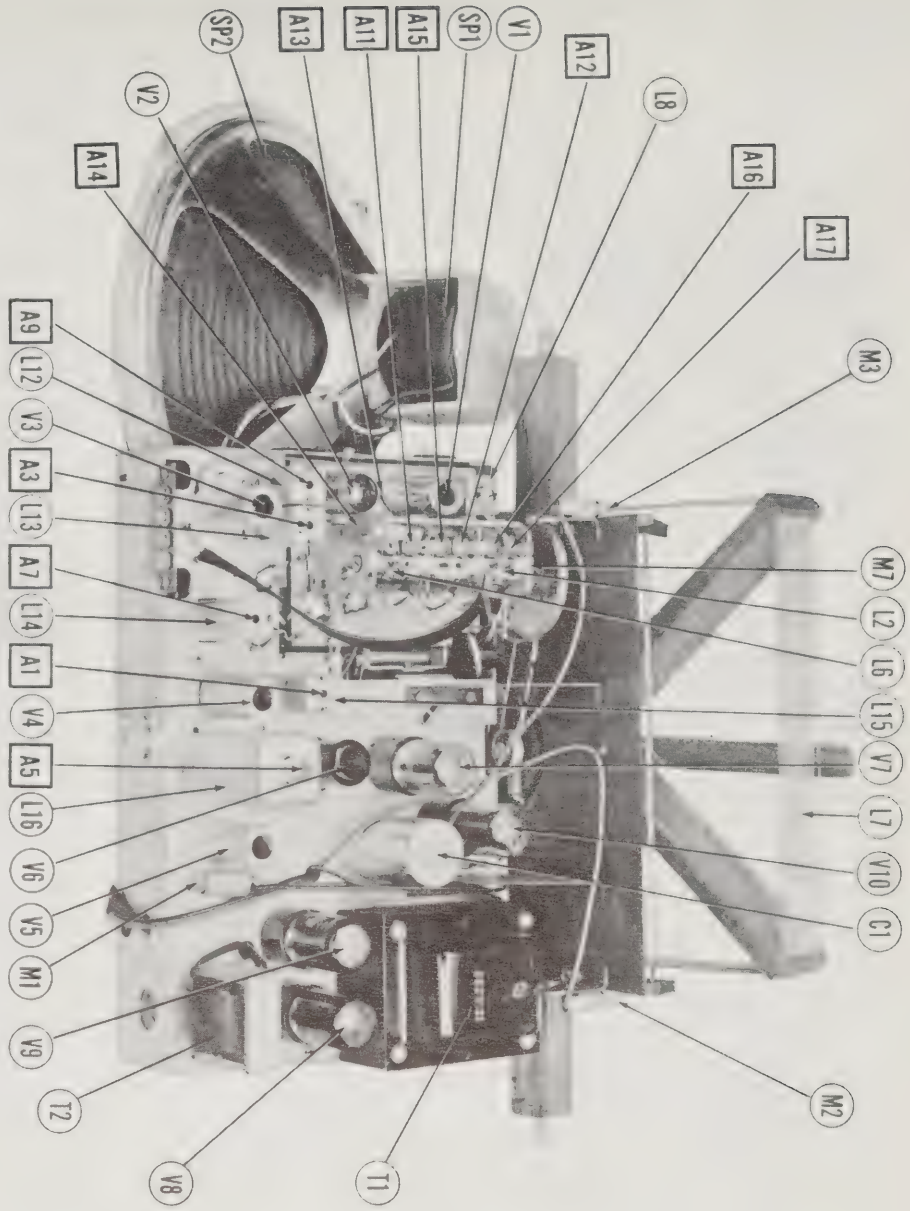
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	DELCO PART No.	IRC PART No.	
R2	47KΩ	½	7240731	BTS-47K	RF Grid
R3	3.3 Meg	½	1211150	BTS-3.3 Meg	RF Grid
R4	33KΩ	½	1213484	BTS-33K	RF Screen Decoupling
R5	68Ω	½	1215558		RF Cathode
R6	820Ω	1	1216155	BTA-8200	Osc. Anode
R7	33Ω	½	1214538		Parasitic Suppressor
R8	22KΩ	½	1211192	BTS-22K	Osc. Grid
R9	1 Meg	½	7238873	BTS-1 Meg	AVC Network
R10	1 Meg	½	7238873	BTS-1 Meg	AVC Network
R11	47KΩ	1	1216157	BTA-47K	AVC Network
R12	47KΩ	1	1216157	BTA-47K	AVC Network
R13	33KΩ	½	1213484	BTS-33K	IF Screen Decoupling
R14	1000Ω	1	1211037	BTA-1000	IF Decoupling
R15	68Ω	½	1215558		FM IF Cathode
R16	33KΩ	½	1213484	BTS-33K	FM IF Screen Decoupling
R17	1000Ω	1	1211037	BTA-1000	FM IF Decoupling
R18	300Ω	½	1213224	BTA-330	Balancing
R19	3900Ω	½	1214546	BTS-3900	De-emphasis
R20	15KΩ	½	1213257	BTS-15K	Ratio Det. Diode Load
R21	1 Meg	½	7238873	BTS-1 Meg	Series Phono
R22	220KΩ	½	1213479	BTS-220K	Phono Tone Compensation
R23	100KΩ	½	1211118	BTS-100K	Diode Filter
R24	330KΩ	½	7240732	BTS-330K	Diode Load
R25	470KΩ	½	1211196	BTS-470K	Tone Compensation
R26	6.8 Meg	½	7241937	BTS-6.8 Meg	AF Grid
R27	100KΩ	½	1211118	BTS-100K	AF Plate
R28	100KΩ	½	1211118	BTS-100K	AF Plate
R29	100KΩ	½	1211118	BTS-100K	AF Plate Decoupling
R30	470KΩ	½	1211196	BTS-470K	2nd AF Grid
R31	47KΩ	1	1216157	BTA-47K	2nd AF Plate
R32	470KΩ	½	1211196	BTS-470K	Phase Inv. Grid
R33	47KΩ	1	1216157	BTA-47K	Phase Inv. Plate
R34	2200Ω	½	1213238	BTS-2200	AF Cathode
R35	2000Ω	½	1213238	BTS-2200	Phase Inv. Cathode
R36	2000Ω	½	1213238	BTS-2200	Feedback
R37	12KΩ	½	1213284	BTS-12K	Feedback
R38	220KΩ	½	1213479	BTS-220K	Output Grid
R39	220KΩ	½	1213479	BTS-220K	Output Grid
R40	100KΩ	½	1211118	BTS-100K	Output Grid
R41	330Ω	2	1214572	BW-2-330	Output Cathode
R42	3300Ω	1	1216127	BTA-3300	Tone Compensation
R43	6800Ω	½	1215315	BTS-6800	Tone Compensation
R44	1000Ω	2	1215183	BW-2-1000	Filter
R45	1000Ω	1	1211037	BTA-1000	Decoupling
R46	2.7Ω	1	1219144	BW-1-2.7	Fil. Dropping

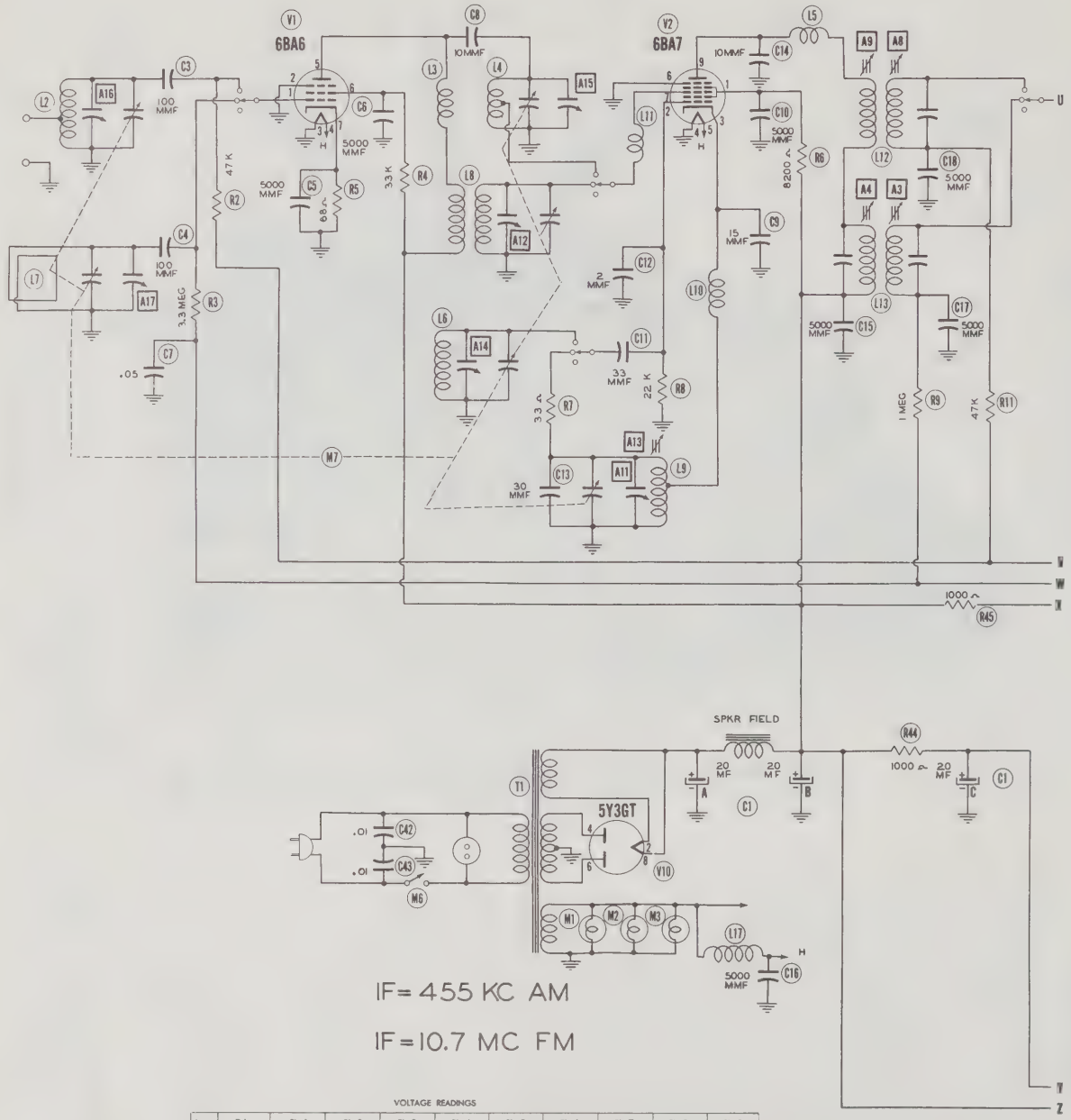
TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	DELCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	117VAC @ .83A	700VCT @ .114A DC	5VAC @ 2A	6VAC @ 3.7A	1218230	P-8013	PH-120B#	P-8983

#Drill New Mounting Holes.



DATE 7/49 4914-7 SET #66 FOLDER #7



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	-.1VDC	0V	0V	6.3VAC	230VDC	105VDC	.8VDC		
V 2	6BA7	115VDC	§-8.5VDC	0V	0V	6.3VAC	0V	0V	0V	230VDC
V 3	6BA6	-.4VDC	0V	6.3VAC	0V	225VDC	100VDC	0V		
‡V4	6AU6	0V	0V	0V	6.3VAC	225VDC	120VDC	.7VDC		
‡V5	6AL5	0V	-.4VDC	0V	5.6VAC	-.2VDC	0V	-.2VDC		
V 6	6SQ7	0V	-.4VDC	0V	-.4VDC	-.4VDC	85VDC	6.3VAC	0V	
V 7	6SN7GT	0V	110VDC	4.5VDC	0V	115VDC	4.6VDC	6.3VAC	0V	
V 8	6V6GT	0V	0V	250VDC	255VDC	0V	0V	6.3VAC	16.5VDC	
V 9	6V6GT	0V	6.3VAC	250VDC	255VDC	0V	0V	0V	16.5VDC	
V 10	5Y3GT	0V	335VDC	0V	335VAC	0V	335VAC	0V	335VDC	

§TAKEN WITH VACUUM TUBE VOLTMETER.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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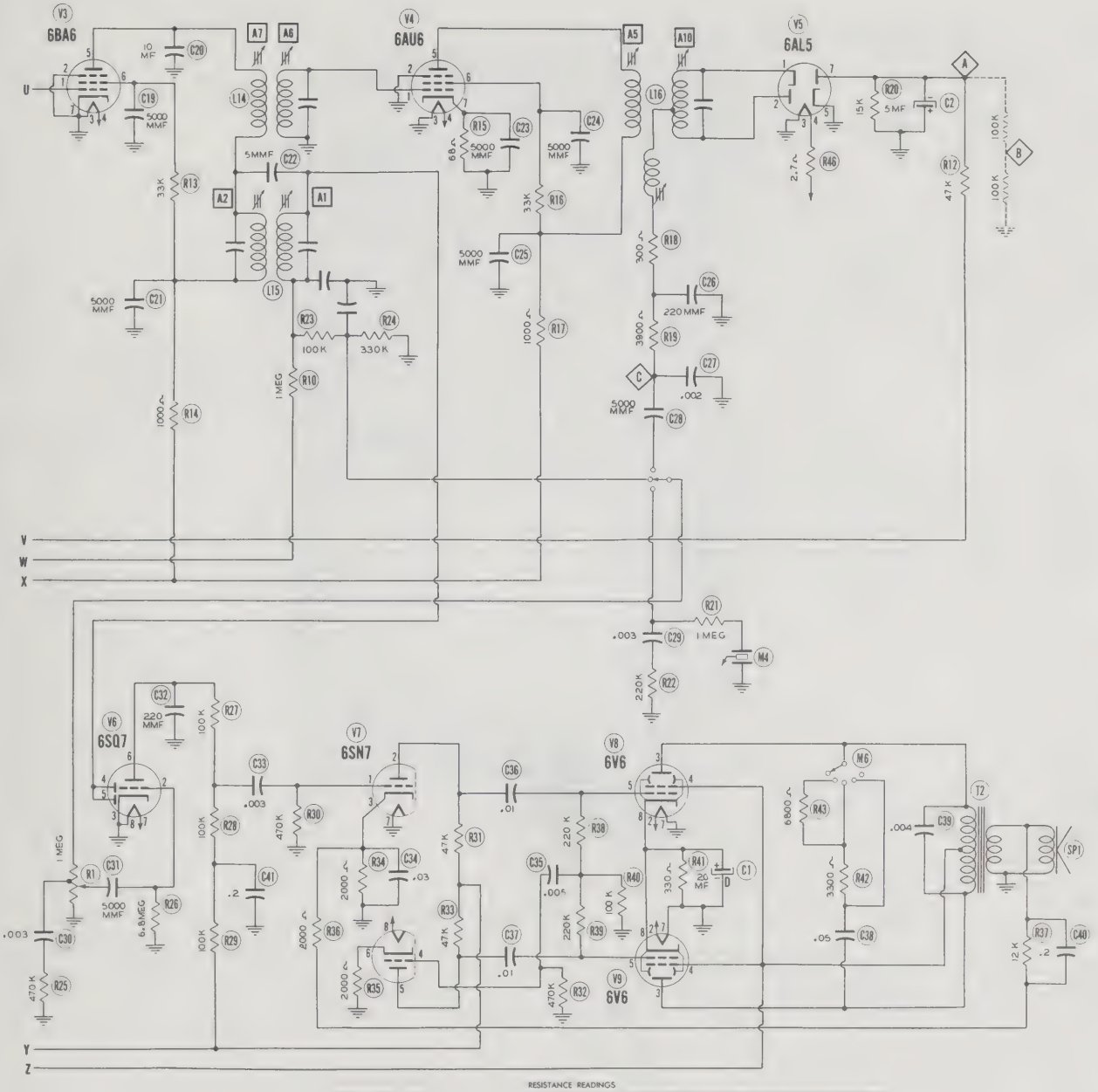

RESISTANCE READINGS

from	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6BA6	4 Meg.	0Ω	.2Ω	0Ω	*1500Ω	*35KΩ	68Ω		
V 2	6BA7	*10KΩ	22KΩ	.5Ω	0Ω	.2Ω	0Ω	6.5Ω	0Ω	*1500Ω
V 3	6BA6	2.5 Meg.	0Ω	.2Ω	0Ω	*2.5KΩ	*35KΩ	0Ω		
‡V4	6AU6	.5Ω	0Ω	0Ω	.2Ω	*2.5KΩ	40KΩ	68Ω		
‡	6AL5	0Ω	15KΩ	0Ω	.2Ω	Inf.	0Ω	Inf.		
V 6	6SQ7	0Ω	6.8 Meg.	0Ω	350KΩ	350KΩ	*300KΩ	.2Ω	0Ω	
V 7	6SN7GT	470KΩ	*47KΩ	2KΩ	470KΩ	*50KΩ	2KΩ	.2Ω	0Ω	
V 8	6V6GT	0Ω	0Ω	*850Ω	*650Ω	340KΩ	Inf.	.2Ω	330Ω	
V 9	6V6GT	0Ω	.2Ω	*850Ω	*650Ω	340KΩ	100KΩ	0Ω	330Ω	
V 10	5Y3GT	Inf.	90KΩ	Inf.	120Ω	Inf.	115Ω	Inf.	90KΩ	

*Measured From Pin 8 Of V10.

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap fully closed and set pointer parallel with base of dial. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	200MMF	High side to AM-RF stator of tuning gang. Low side to chassis.	455KC	AM (center position)	Point of non-interference	Across voice coil	A1,A2, A3,A4	Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect two matched 100KΩ (± 5%) resistors in series from pin 2 of 6AL5 (V5) to chassis. The junction of the two resistors is point (B) as designated on schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
2.	200MMF	High side to FM-RF stator of tuning gang. Low side to chassis.	10.7MC	FM (extreme clockwise)	Point of non-interference	DC Probe to Point (A) Common to chassis.	A5,A6, A7,A8, A9	Detune A10 and then adjust A5, A6, A7,A8 and A9 for maximum deflection
3.	200MMF	"	"	"	"	DC Probe to Point (C) Common to Point (B)	A10	Adjust for zero reading. A positive and negative reading is obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
2.	200MMF	High side to FM-RF stator of tuning gang. Low side to chassis.	10.7MC (450MC Sweep)	FM	Point of non-interference	Vert.Amp. to Point (A) Low side to chassis.	A5,A6, A7,A8, A9	Disconnect stabilizer cap. (C2). Adjust for maximum amplitude and symmetry as per Fig 1.
3.	200MMF	"	"	"	"	Vert.Amp. to Point (C) Low side to chassis.	A10	Reconnect stabilizer cap (C2). Adjust A10 so cross over point occurs at center of pattern as per Fig 2. Slightly retouch A5 for maximum amplitude and straightness of cross over lines.

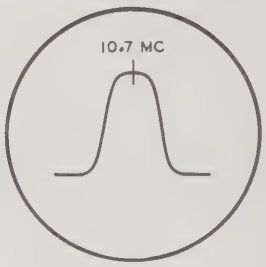


FIG. 1

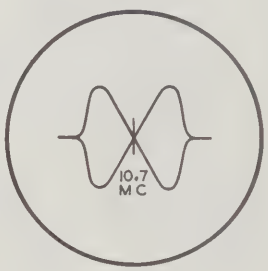


FIG. 2

AM RF ALIGNMENT

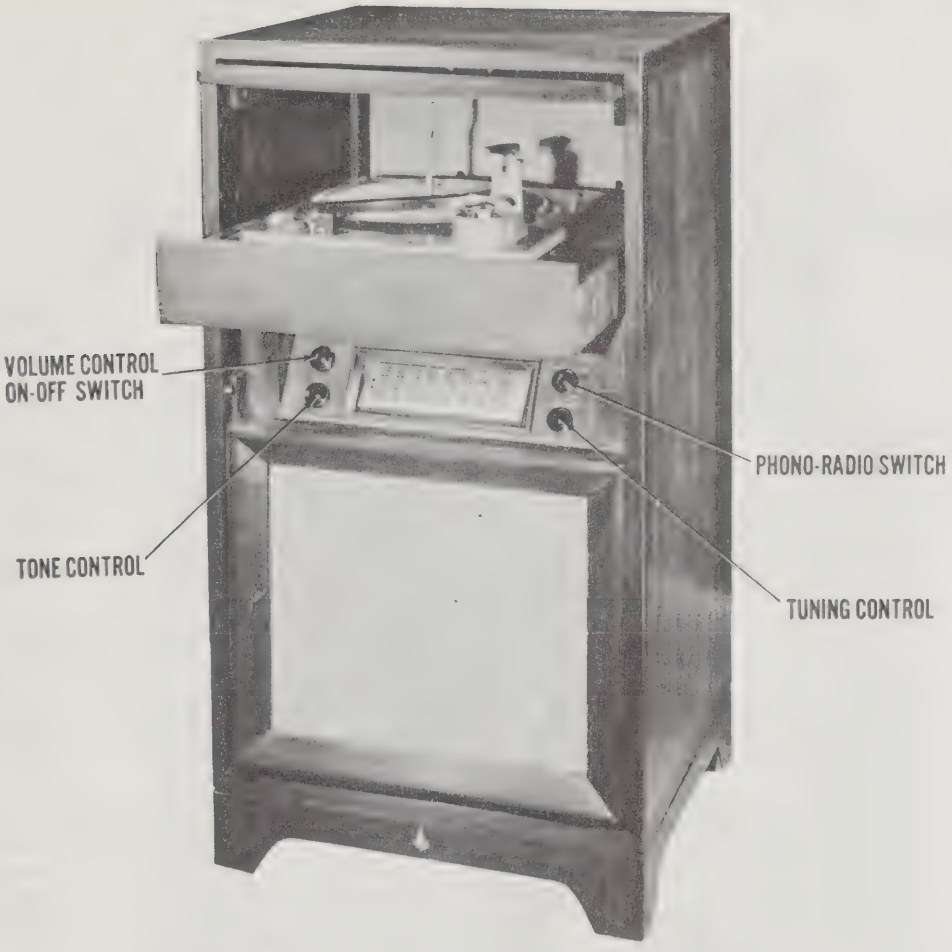
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
4.	200MMF	High side to Ext. antenna terminal. Low side to chassis.	1615KC	AM	Tuning cap fully open	Across voice coil	A11	Adjust for maximum output.
5.	200MMF	"	1380KC	"	1380KC	"	A12	"
6.	200MMF	"	600KC	"	600KC	"	A13	Rock tuning cap and adjust for maximum output.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
7.	300Ω carbon res.	High side to Ext. FM antenna terminal. Low side to chassis.	106MC	FM	106MC	DC Probe to Point (A) Common to chassis.	A14	Adjust for maximum deflection.
8.	300Ω carbon res.	"	90MC	"	90MC	"	L6	Expand or compress L6 for maximum deflection. Repeat steps 7 & 8 until calibration is correct at 90 and 106MC. DO NOT BEND FM TUNING GANG PLATES.
9.	300Ω carbon res.	High side to Ext. FM antenna terminal. Low side to chassis.	106MC	FM	106MC	DC Probe to Point (A) Common to chassis.	A15	Adjust for maximum deflection.
10.	300Ω carbon res.	"	"	"	"	"	A16	Rock tuning gang and adjust for maximum deflection.
11.	300Ω carbon res.	"	90MC	"	90MC	"	L2,L4	Expand or compress coil turns for maximum deflection. Repeat steps 10 and 11.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
12.		Loop	1380KC	AM	1380KC	Across voice coil	A17	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

EMERSON
MODEL 605 (Ch. 120076B)



EMERSON
MODEL 605 (Ch. 120076B)

EMERSON MODEL 605

TRADE NAME	Emerson, Model 605 (Ch. 120076B)
MANUFACTURER	Emerson Radio and Phonograph Corp., 111 8th Ave., New York 11, New York
TYPE SET	AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver with Loop Antenna
TUBES(SEVEN)	Types 12BA6 FM RF Amp., 12BA7 Converter, 12BA6 1st IF Amp., 12BA6 FM 2nd IF Amp., 12AU6 Limiter, 19T8 DET-AVC-AF, 35B5 Power Output
POWER SUPPLY	105-125 Volts AC RATING: .40 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	540-1620KC FREQ. MOD. 88-108MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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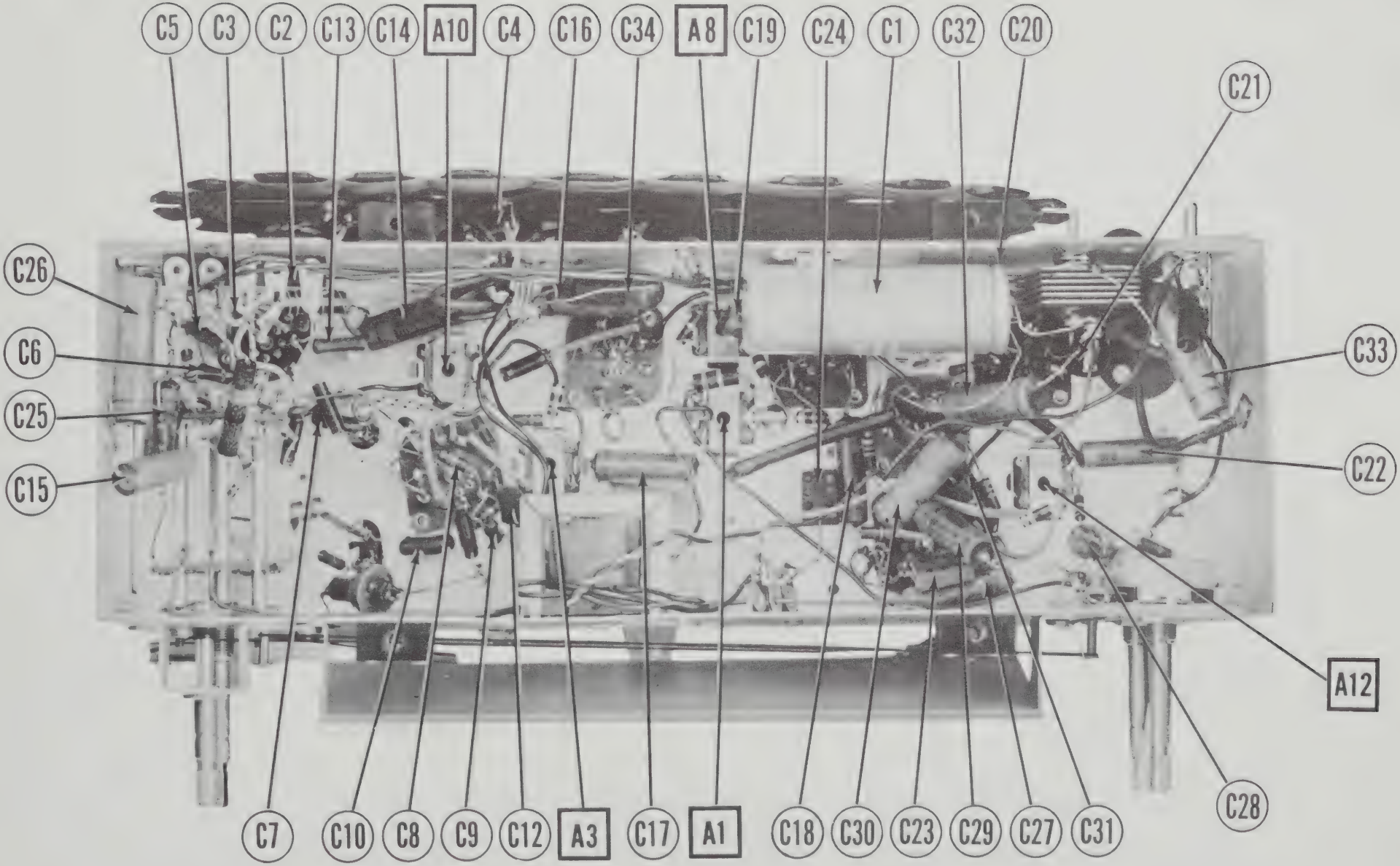
C5
C3
C2
C13
C14
A10
C4
C16
C34
A8
C19
C24
C1
C32
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C26
C6
C25
C15
C33
C22
A12
C28
C7
C10
C8
C9
C12
A3
C17
A1
C18
C30
C23
C29
C27
C31

R28
M4
R16
R17
R22
R14
R13
R10
R11
R8
L16
R7
L4
L15
L2
L14
R3
R4
R15
R24
L3
R12
M3
L5
R6
L7
L6
R5
R9
T1
R27
R21
R20
R26
R25
R18
R19
R1
R2
R23

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		EMERSON PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	12BA6	12BA6	7BK	
V2	Converter	12BA7	12BA7		
V3	1st IF Amp.	12BA6	12BA6	7BK	
V4	2nd FM IF Amp.	12BA6	12BA6	7BK	
V5	Limiter	12AU6	12AU6	7BK	
V6	Disc-DET-AVC-AF	19T8	19T8		
V7	Power Output	35B5	35B5	7BZ	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	EMERSON PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	50	150	925126	AF888D	UP84215		M-8040	EL-340	Green Filter
B	100	150					-150		Red Filter
C2	1500		928006	1467-0015	1W1D15	GP2L-0015	MW.5-215	1FM-215	Ant. Isolation
C3	1500		928006	1467-0015	1W1D15	GP2L-0015	MW.5-215	1FM-215	Ant. Coupling
C4	2.2		Note			NP0K-3			Ant. Coupling
C5	1500		928006	1467-0015	1W1D15	GP2L-0015	MW.5-215	1FM-215	RF Cath. Bypass
C6	1500		928006	1467-0015	1W1D15	GP2L-0015	MW.5-215	1FM-215	RF Screen Bypass
C7	75		928015	1468-000075	5W5Q7	GP2K-75	MOS.5-47	1FM-475	RF Coupling
C8	1.5		915011						Osc. Coupling
C9	15		928016			GP1K-15		MS-415	RF Bypass
C10	75		928015	1468-000075	5W5Q7	GP1K-75	MOS.5-47	1FM-475	Osc. Grid Cap
C11	5		928017	1469-000005	5R5V5	NP0K-5	MOS.5-55	MS-55	Fixed Trimmer
C12	5000		928109	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Anode Bypass
C13	1500		928006	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	RF Fil. Bypass
C14	.05	400	922101	P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C15	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	RF Bypass
C16	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	1st IF Fil. Bypass
C17	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	1st IF Decoupling
C18	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	2nd IF Cath. Bypass
C19	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	2nd IF Decoupling
C20	24	300	928110	1468-000025	5W5Q25	GP1K-25	MO.5-425	MS-425	IF Coupling
C21	1500		928006	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	Limiter Fil. Bypass
C22	.01	200	920092	P488-01	GT2S1	GP2-335-01	ST-4-01	TM-11	Limiter Decoupling
C23	110	500	910010	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
C24	470	500	910014	1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	De-emphasis
C25	.001	400	920514	P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Audio Coupling
C26	.05	400	922101	P488-05	GT4S5		ST-4-05	TM-15	Phono Isolation
C27	.002	600	920515	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Audio Coupling
C28	.02	200	920100	P488-02	GT2S2		ST-4-02	TM-12	Tone Compensation
C29	.002	400	920515	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Tone Compensation
C30	.01	600	920090	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C31	470	500	910014	1468-0005	5W5T5	GP1K-500	MO.5-35	1FM-35	RF Bypass
C32	.01	600	920090	P688-01	GT6S1		ST-6-01	TM-11	Output Plate Bypass
C33	.05	400	922101	P488-05	GT6S5		ST-4-05	TM-15	Line Filter
C34	.01	400	920090	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Speaker Isolation

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	EMERSON PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	500KΩ	½	390057	Q13-133X	AT-78	Volume Control tapped @ 125KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	Attach to R1A per instructions
R2A	2 Meg	½	390046	Q13-139	AM-66-Z	Tone control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R2A per instructions

PARTS LIST AND DESCRIPTIONS (Continued)

DIAL LIGHTS

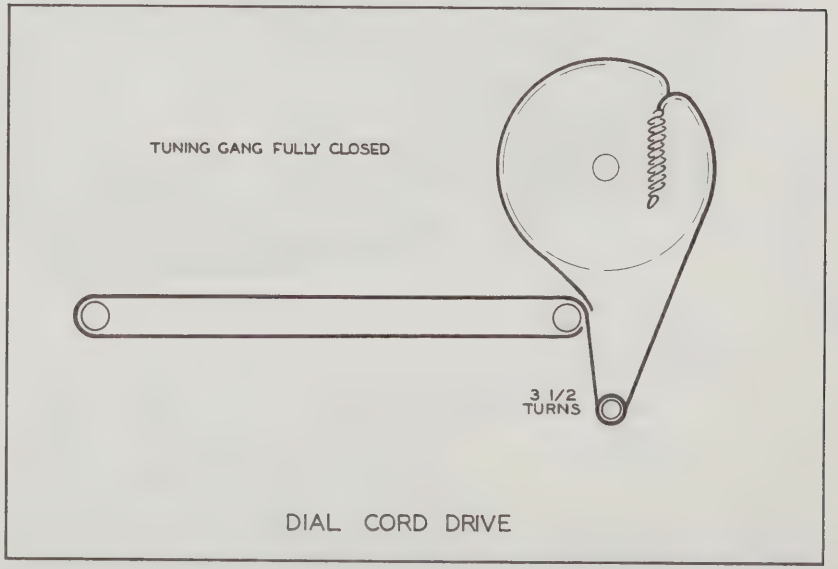
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					EMERSON PART No.		
M1	Bayonet	110VAC			807003		10 Watt

PHONO CARTRIDGE

ITEM No.	REPLACEMENT DATA		REMARKS
	EMERSON PART No.	ASTATIC PART No.	
M2		L-70	

MISCELLANEOUS

ITEM No.	PART NAME	EMERSON PART No.	NOTES
M3	Switch	510038	Band-Phono
M4	Rectifier	817101	Selenium
M5A	2 Gang Var. Cap.	900045	(19-330MMF, 16-207MMF)
	2 Gang Var. Cap.	900400A	(Alternate)
	Dial Crystal	520071	
	Dial Pointer	525017	
	Knob	460470	
	Knob	460041	With Indicator



PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	EMERSON PART No.	IRC PART No.	
R3	47Ω	½	340110		RF Cathode
R4	100Ω	½	350290	BW-½-150	RF Screen Decoupling
R5	22KΩ	½	340110	BTS-22K	Osc. Grid
R6	150Ω	½	340096		Parasitic Suppressor
R7	150Ω	½	350290	BW-½-150	Osc. Anode
R8	68Ω	½	340210		Parasitic Suppressor
R9	100Ω	½	350290	BW-½-150	IF Decoupling
R10	47KΩ	1	340830	BTA-27K	Diode Filter
R11	1 Meg	½	351210	BTS-1 Meg	Diode Load
R12	2.2 Meg	½	351290	BTS-2.2 Meg	AVC Network
R13	68Ω	½	340210		Parasitic Suppressor
R14	68Ω	½	340210		2nd FM IF Cathode
R15	680Ω	½	340450	BTS-680	2nd FM IF Decoupling
R16	100KΩ	½	340870	BTS-100K	Limiter Grid
R17	15KΩ	½	350770	BTS-15K	Limiter Decoupling
R18	100KΩ	½	340970	BTS-100K	Disc. Load
R19	100KΩ	½	340970	BTS-100K	Disc. Load
R20	68KΩ	½	340850	BTS-68K	De-emphasis
R21	4.7 Meg	½	351370	BTS-4.7 Meg	AF Grid
R22	470KΩ	½	351130	BTS-470K	AF Plate
R23	22KΩ	½	350810	BTS-22K	Tone Compensation
R24	2.2 Meg	½	351290	BTS-2.2 Meg	Phono Tone Compensation
R25	470KΩ	½	351130	BTS-470K	Output Grid
R26	180Ω	½	370310	BW-½-180	Output Cathode
R27	390Ω	3	394042	AB-1000	Filter
R28	27Ω	1	380090		Surge Limiter

TRANSFORMER (OUTPUT)

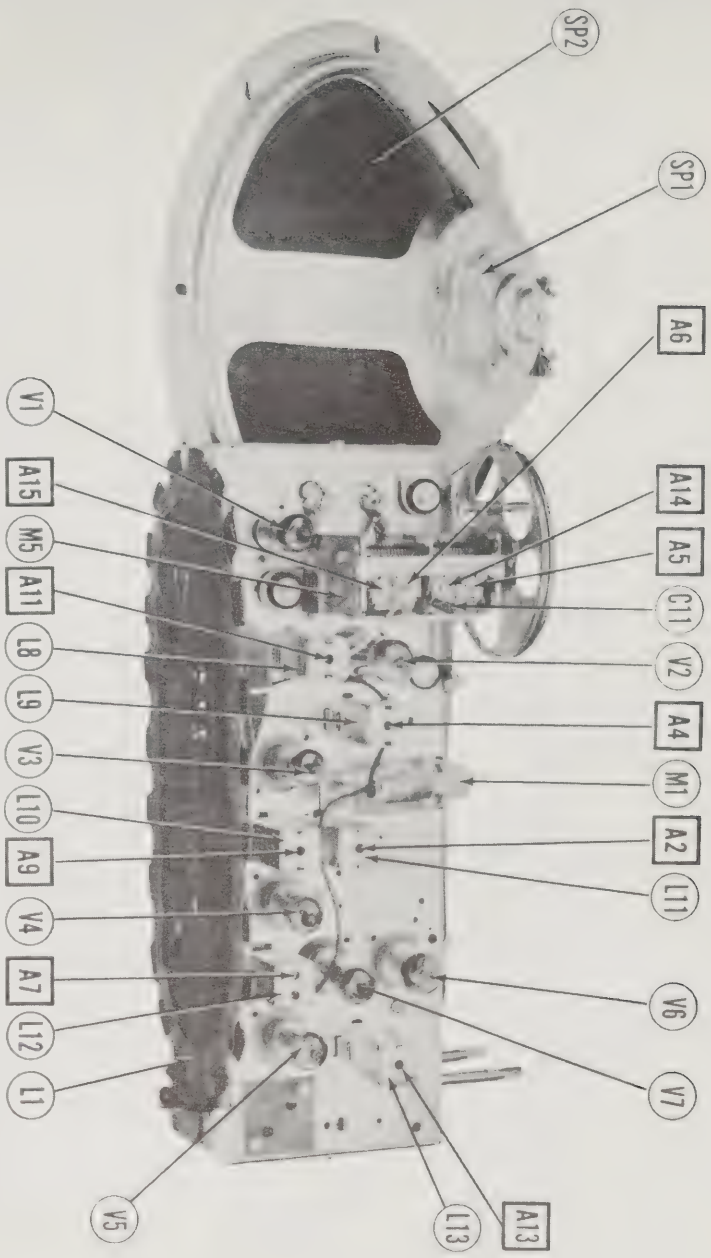
ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		EMERSON PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2500Ω	3.6Ω	155Ω TAP @ 5Ω	.6Ω	734042	A-3330	RC-3	A-3031	

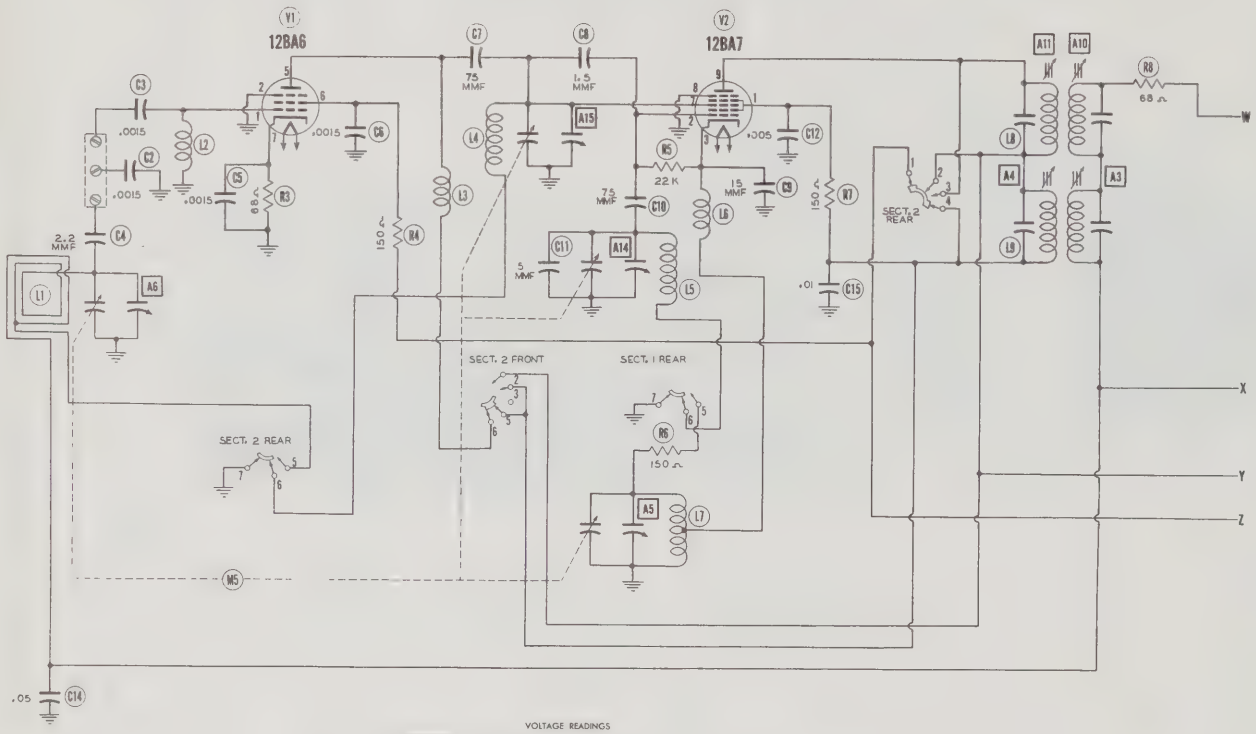
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V.C. IMP.	EMERSON PART No.	JENSEN PART No.	QUAM PART No.	
SP1	PM	3.5Ω	180051	ST-101* MOD.P12-T	12A4*	*Replace Output Transformer To Match 6-8Ω Voice Coil
	Cone Dia.	V.C. Dia.				
SP2	11-7/8"	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	EMERSON PART No.	MEISSNER PART No.	
L1	Loop Ant.	.2Ω	1.2Ω	700011		Alternate Part #700021
L2	FM Ant.Coil	0Ω		710019		
L3	RF Choke	.2Ω		705002		
L4	FM RF Coil	0Ω		713024		
L5	FM Osc.Coil	0Ω		716013		
L6	RF Choke	.2Ω		705002		
L7	AM Osc.Coil	9Ω		716015	14-1060	
L8	1st FM IF	.1Ω	.8Ω	720024		Alternate Part #720082, and 720067
L9	1st AM IF	15Ω	15Ω	720031	16-6678	Alternate Part #720084, and 720075
L10	2nd FM IF	.6Ω	.6Ω	720025		Alternate Part #720082, and 720067
L11	2nd AM IF	15Ω	15Ω	720032		Alternate Part #720085, and 720076
L12	3rd FM IF	1.8Ω		720069		Alternate Part #720083, and 720077
L13	FM Disc. XFMR	.5Ω	1Ω	708005		Alternate Part #708012, and 708013
L14	RF Choke	6Ω		705013		
L15	Fil. Choke	.2Ω		705002		
L16	Fil. Choke	.2Ω		705002		





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
‡V1	12BA6	0V	0V	80VAC	67VAC	85VDC	85VDC	.8VDC		
V 2	12BA7	100VDC	§-3.5VDC	0V	55VAC	67VAC	0V	-.6VDC	0V	100VDC
V 3	12BA6	-.6VDC	0V	55VAC	44VAC	100VDC	100VDC	0V		
‡V4	12BA6	0V	0V	44VAC	32VAC	80VDC	80VDC	.8VDC		
‡V5	12AU6	-.3VDC	0V	32VAC	18VAC	50VDC	50VDC	0V		
‡V6A	19T8	-.9VDC	-5.2VDC	7VDC	18VAC	0V	-.5VDC	0V	-.5VDC	33VDC
V6B	19T8	-.4VDC	-.4VDC	-.1VDC	18VAC	0V	-.5VDC	0V	-.5VDC	35VDC
V7	35B5	0V	6.4VDC	117VAC	80VAC	130VDC	100VDC	0V		

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
‡V1	12BA6	0Ω	0Ω	54Ω	50Ω	*1000Ω	*1000Ω	68Ω		
V 2	12BA7	*1000Ω	22KΩ	.8Ω	42Ω	50Ω	0Ω	2.5 Meg.	0Ω	*1000Ω
V 3	12BA6	2.5 Meg.	0Ω	42Ω	36Ω	*1000Ω	*1000Ω	0Ω		
‡V4	12BA6	68Ω	0Ω	36Ω	27Ω	*1500Ω	*1500Ω	68Ω		
‡V5	12AU6	100KΩ	0Ω	27Ω	18Ω	*16KΩ	*16KΩ	0Ω		
‡V6A	19T8	100KΩ	*100KΩ	150KΩ	18Ω	0Ω	1 Meg.	0Ω	4.7 Meg.	*550KΩ
V6B	19T8	100KΩ	100KΩ	200KΩ	18Ω	0Ω	300KΩ	0Ω	4.7 Meg.	*550KΩ
V7	35B5	470KΩ	180Ω	65Ω	54Ω	*165Ω	*1000Ω	470KΩ		

*Measured From Junction Of M4 And C1A.

‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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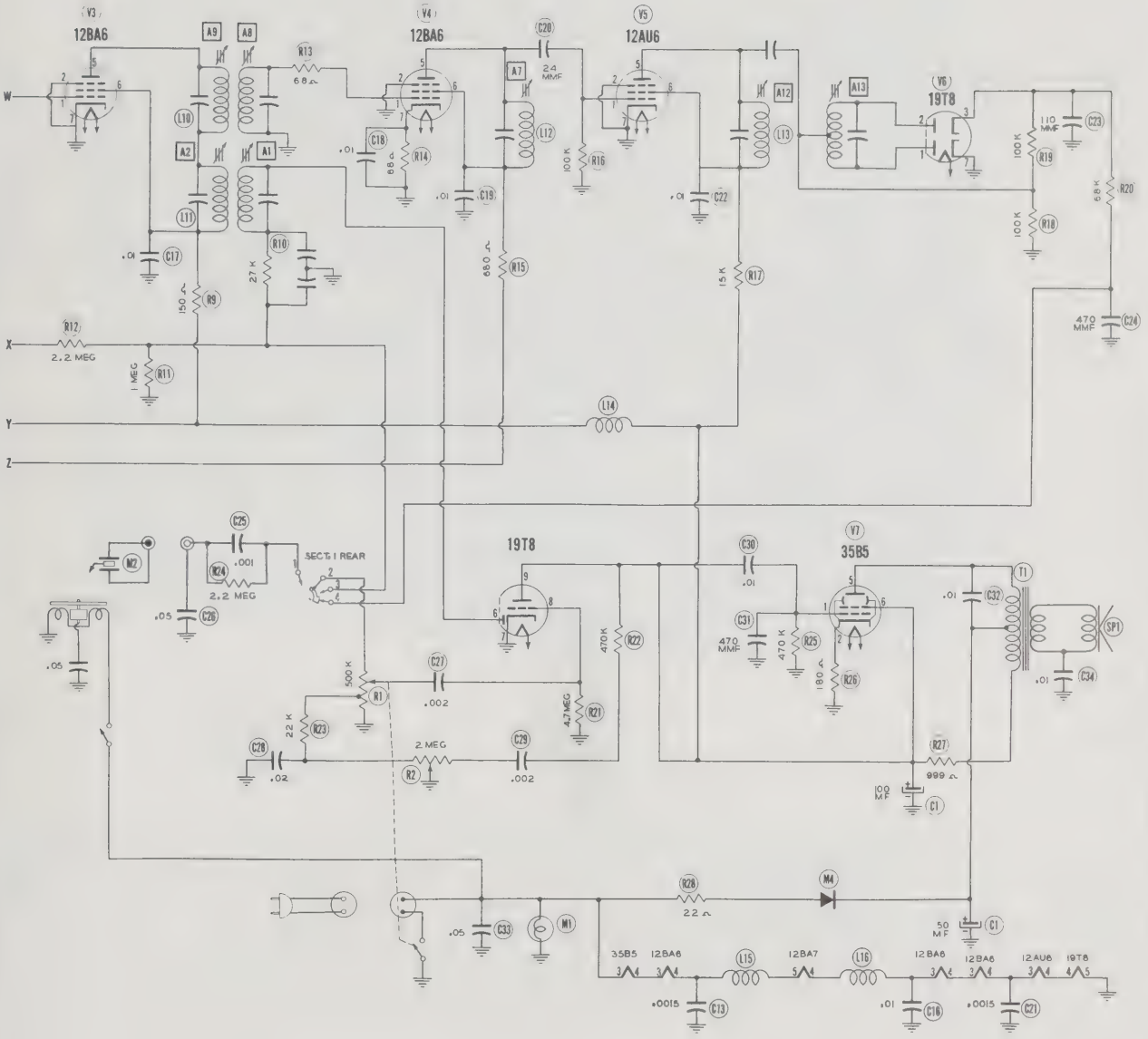

IF=455 KC AM

IF=10.7 MC FM

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To position pointer, turn variable condenser fully closed and set pointer to reference mark on dial backplate at the low frequency end of the dial.

Volume control should be set at maximum position. The output of the signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment tool for all adjustments.

Use isolation transformer if available; otherwise connect a .1MFD condenser in series with low side of signal generator to chassis.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 7 (grid) of 12BA7 (V2). Low side to chassis.	455KC	BC	Tuning condenser fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. Reduce dummy antenna to .001MFD. if isolation transformer is not used.
2.		Loop	1600KC	"	"	"	A5	Form loop of several turns of wire. Radiate signal into receiver loop. Adjust for maximum output.
3.		Loop	1400KC	"	Tune for max. output.	"	A6	Adjust for maximum output.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to Pin 1 (grid) of 12BA6 (V4). Low side to chassis.	10.7MC (Unmodulated)	FM	Tuning condenser fully open.	Connect DC probe to point "A". Common to chassis.	A7	Adjust for maximum output.
5.	.01MFD	High side to Pin 1 (grid) of 12BA6 (V3). Low side to chassis.	"	"	"	"	A8, A9	"
6.	.01MFD	High side to Pin 7 (grid) of 12BA7 (V2). Low side to chassis.	"	"	"	"	A10,A11	"
7.	.01MFD	High side to Pin 1 (grid) of 12BA6 (V4). Low side to chassis.	"	"	"	Connect DC probe to point "B". Common to chassis.	A12	"
8.	.01MFD	"	"	"	"	Connect DC probe to point "C". Common to chassis.	A13	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal, with 60 cycle modulation and 450KC Sweep. Use 120 cycle sawtooth sweep voltage in oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT SCOPE	ADJUST	REMARKS
4.	.01MFD	High side to Pin 1 (grid) of 12BA6 (V3). Low side to chassis.	10.7MC (450KC Sweep)	FM	Tuning condenser fully open.	Vertical input to Point "A". Ground to chassis.	A7, A8, A9	Adjust for maximum amplitude and symmetry as per Fig. 1.
5.	.01MFD	High side to Pin 7 (grid) of 12BA7 (V2). Low side to chassis.	"	"	"	"	A10,A11	"
6.	.01MFD	High side to Pin 1 (grid) of 12BA6 (V4). Low side to chassis.	"	"	"	Vertical input to Point "C". Ground to chassis.	A12,A13	Alternately adjust A12 for maximum amplitude and A13 for maximum straightness of cross-over lines, with cross-over occurring at center of pattern as per Fig. 2. Continue with step 9.

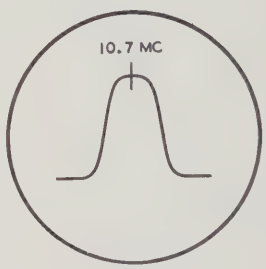

FIG. 1

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
9.	150Ω Resistor in series with each gen lead.	High side to FM ant. term. Low side to chassis.	108.0MC (Unmodulated).	FM	Tuning condenser fully open. (108.0MC)	Connect DC probe to Point "A". Common to chassis.	A14	Adjust for maximum output.
10.	150Ω Resistor in series with each gen lead.	"	106.0MC	"	Tune for maximum output.	"	A15	"

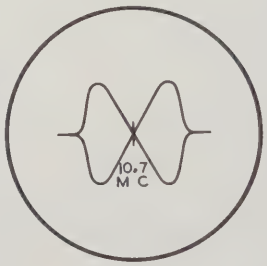

FIG. 2

FIRESTONE
MODEL 4-C-13 (CODE 332-8-140623)
(BATTERY-LINE OPERATED)

FIRESTONE
MODEL 4-C-13 (CODE 332-8-140623)
(BATTERY-LINE OPERATED)

FIRESTONE
MODEL 4-C-13 (CODE 332-8-140623)
(BATTERY-LINE OPERATED)

FIRESTONE MODEL 4-C-13

TRADE NAME	Firestone, Model 4-C-13 (Code 332-8-140623)
SUPPLIER	The Firestone Tire & Rubber Co., Akron, Ohio.
TYPE SET	Three Power Operated Portable Superheterodyne Receiver with Loop Antenna.
TUBES (FOUR)	Types 1R5 Converter, 1U4 IF Amp., 1U5 DET-AVC-AF, 3V4 Power Output.
POWER SUPPLY	105-125 Volts AC-DC or 7.5 Volts "A" Supply and 67.5 Volts "B" Supply.
RATING	.12 Amp. @ 117 Volts AC or 55MA @ 7.5 Volts DC and 10.5MA @ 67.5 Volts DC
TUNING RANGE—BROADCAST	545-1610KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer parallel with base of dial. Use battery power when available. If AC power is used, use an isolation transformer when available. If not, connect a .1 MFD capacitor in series with low side of the signal generator and B-.

ALIGNMENT INSTRUCTIONS

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 6 (Grid) of 1R5 (V2). Low side to B-.	455KC	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If AC power is used without an isolation transformer reduce dummy antenna to 200 MMF to reduce hum modulation.
2.	.1MFD	"	1610KC	"	"	A5	Adjust for maximum output.
3.		Loop	1400KC	Tune for max. signal.	"	A6	Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output.

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

FIRESTONE
MODEL 4-C-13

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		FIRESTONE PART No.	STANDARD REPLACEMENT		
V1	Converter	1R5	1R5	7AT	
V2	IF Amp.	1U4	1U4	6AR	
V3	DET-AVC-AF	1U5	1U5	6BW	
V4	Power Output	3V4	3V4	6BX	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	FIRESTONE PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	40	150	A18-290	AF84D20A*	UP6CJ64*		DY-304*	EL-351*	Filter Red
B	50	150							Filter Yellow
C	100	10							Filament Bypass Blue
C2	.05	200	A16-152	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C3	30	500	A15-175	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C4	.05	200	A16-152	P288-05	GT2S5		ST-4-05	TM-15	RF Bypass
C5	.1	200	A16-157	P288-1	GT2P1		ST-2-1	68P17	Filament Bypass
C6	.005	600	A16-153	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	IF Grid Filter
C7	100	500	A15-188	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C8	.005	600	A16-153	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C9A	5000		Note	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	AF Screen Bypass
B	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	AF Plate Bypass
C	5000			P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C10	.002	200	A16-182	P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Output Plate Bypass
C11	.05	400	A16-189	P488-05	GT4S5		ST-4-05	TM-15	Line Filter
C12	.05	400	A16-158	P488-05	GT4S5		ST-4-05	72P1	Line Isolation

*Install Mounting Ring. Use Insulating Sleeve.
Note Items C9A, C9B, C9C, R8A, R8B and R8C are combined into one unit obtainable under Mfgr's Part No. A17-100.

CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	FIRESTONE PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	1 Meg	½	A24-178	¶13-137	15/16-63-Z	Volume control
B	Switch		Not Req.	76-2*	DPST Switch#	

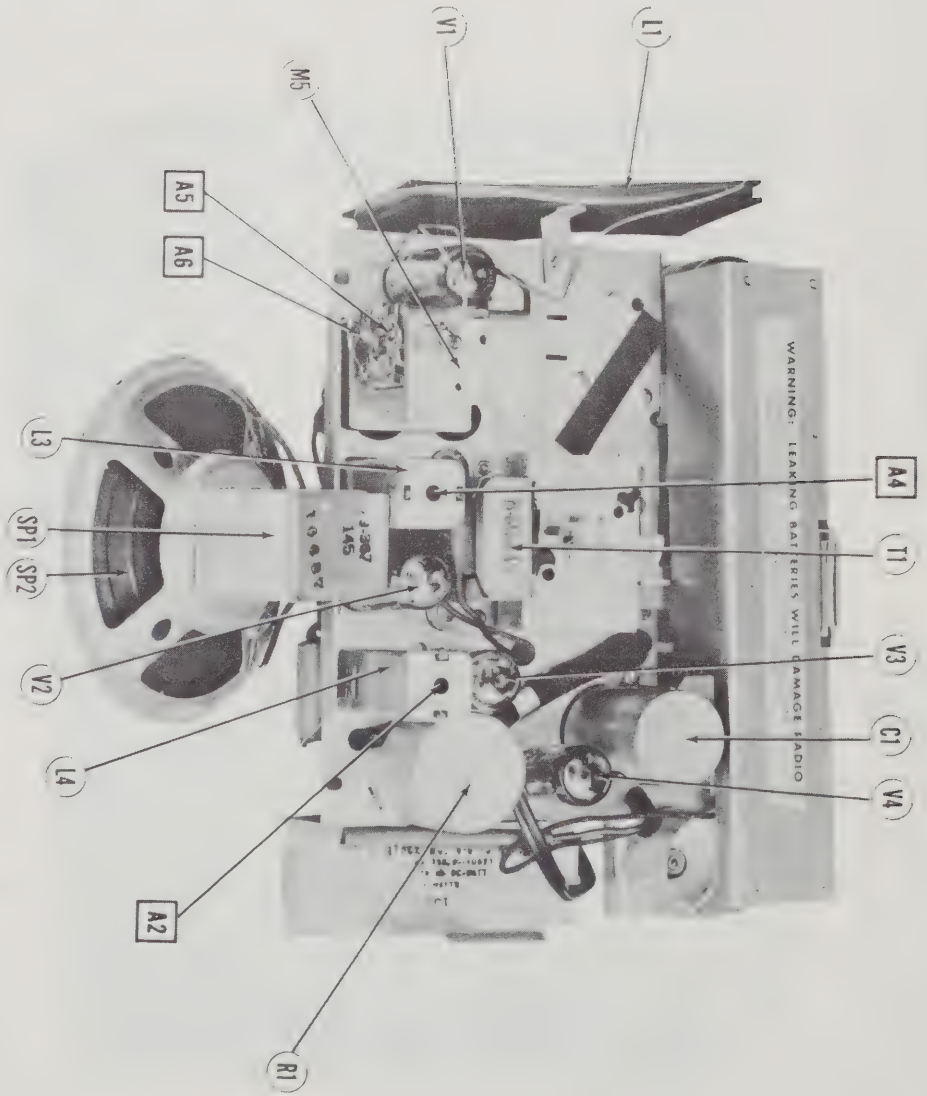
*Attach to R1A per instructions.
#Attached at factory.

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	FIRESTONE PART No.	IRC PART No.	
R2	100KΩ	½	A60-671	BTS-100K	Osc. Grid
R3	10 Meg	½	A60-663	BTS-10 Meg	IF Grid
R4	1500Ω	½	A60-680	BTS-1500	Filament String
R5	47KΩ	½	A60-685	BTS-47K	Diode Filter
R6	2.2 Meg	½	A60-684	BTS-2.2 Meg	AVC Network
R7	10 Meg	½	A60-663	BTS-10 Meg	AF Grid
R8A	1 Meg	½	Note	BTS-1 Meg	AF Plate
B	4.7 Meg	½		BTS-4.7 Meg	AF Screen
C	2.2 Meg	½		BTS-2.2 Meg	Output Grid
R9	470Ω	½	A60-722	BTS-470-5%	Filament String 5%
R10	1 Meg	½		BTS-1 Meg	Output Grid
R11	1200Ω	½	A60-756	BTS-1200	Filament String
R12	390Ω	½	A60-665	BW-½-390	Bias Network
R13	560Ω	½		BTS-560	Bias Network
R14	2000Ω	10	A60-757	AB-2000	Filter (Wire Wound)
R15	3300Ω	1	A60-724	BW-1-3300	Filter
R16	160Ω	5	A60-725		Surge Limiter (Wire Wound)

Note Items C9A, C9B, C9C, R8A, R8B, and R8C are combined into one unit obtainable under Mfgr's Part No. A17-100.

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		FIRESTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	8K Ω	2.5 Ω	435 Ω	.5 Ω	B80-245	A-3329		A-2988	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			FIRESTONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.	B79-367			
	PM	2.5 Ω				
SP2	CONE DIA.	V.C. DIA.				
	3-7/8"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	FIRESTONE PART No.	MEISSNER PART No.	
L1	Loop Ant.	1.2 Ω		B82-58		
L2	Osc. Coil	3.5 Ω	10 Ω	A10-514		
L3	Input IF	16 Ω	19 Ω	C10-474	16-6668	
L4	Output IF	16 Ω	19 Ω	C10-475	16-6669	

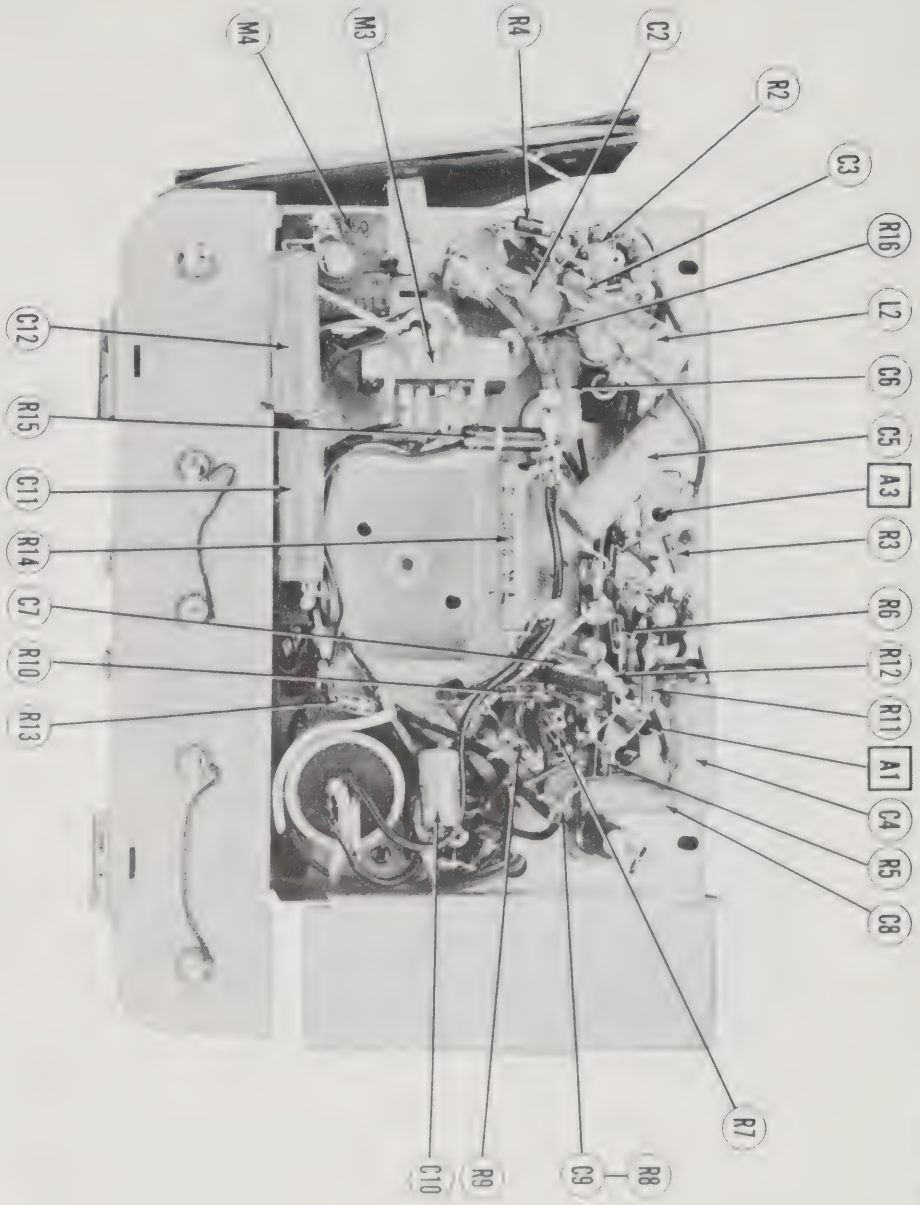
BATTERIES

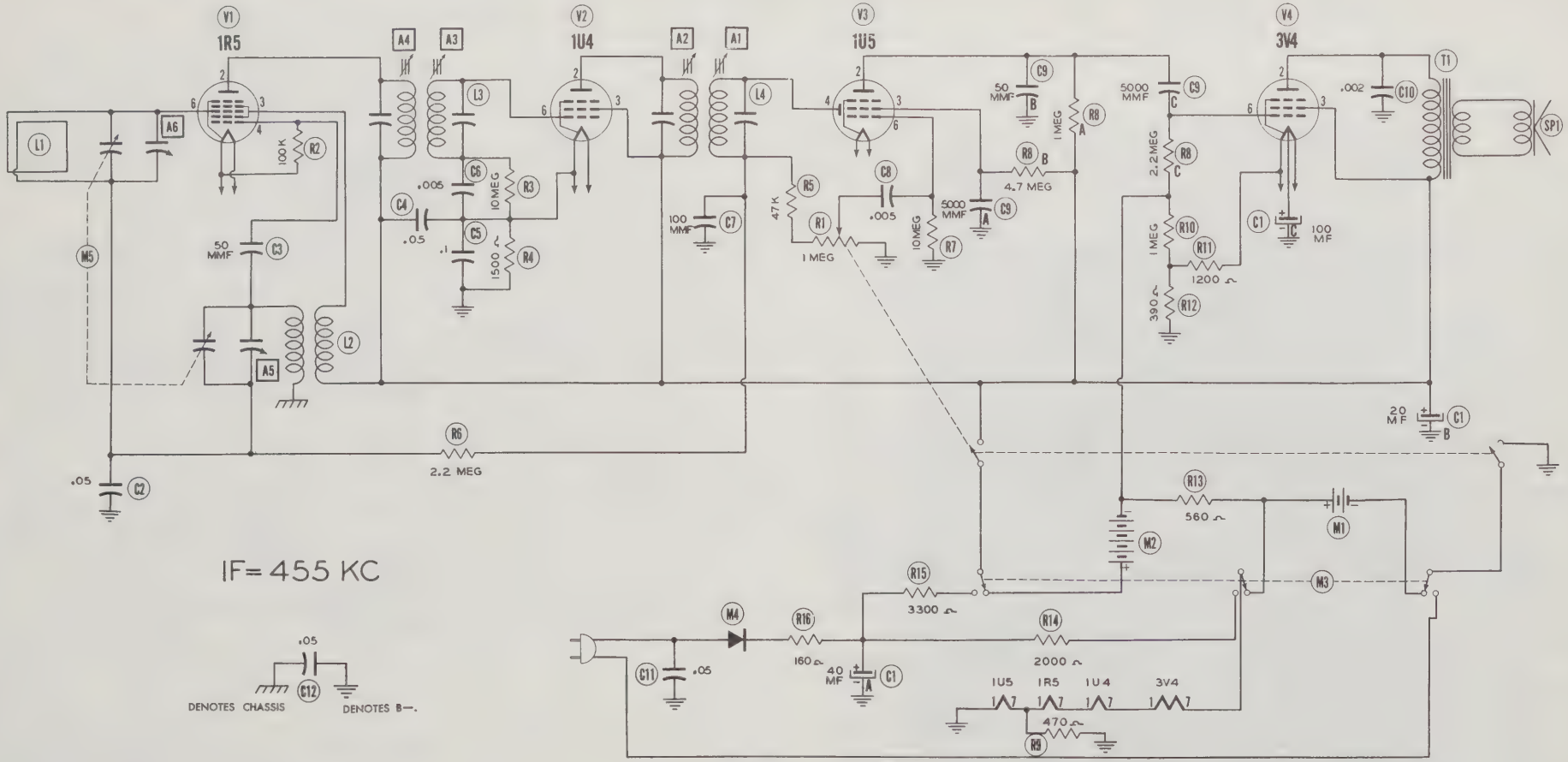
ITEM No.	VOLTAGE	FIRESTONE PART No.	REPLACEMENT DATA						INSTALLATION NOTES
			EVEREADY			BURGESS			
			"A"	"B"	"A-B"	"A"	"B"	"A-B"	
M1	7.5 V"A"	7-C-1	950			2			5 Used In Series
M2	67.5V"B"	4-D-44		467			XX45		

MISCELLANEOUS

ITEM No.	PART NAME	FIRESTONE PART No.	NOTES
M3	Switch	A65-195	AC/DC-Battery
M4	Rectifier	A65-178	Selenium
M5	Gang Var. Cap.	C15-195	(28-387MMF, 24-142MMF)
	Cabinet	B4-443	
	Handle	A65-239	
	Knob	C52-271	Dial
	Knob	C52-272	Tuning
	Knob	C52-273	Volume

CHASSIS—BOTTOM VIEW





IF= 455 KC

.05 C12 — DENOTES CHASSIS — DENOTES B—.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	1.4VDC	65VDC	65VDC	§-9.5VDC	1.3VDC	0V	2.8VDC
V 2	1U4	2.8VDC	65VDC	65VDC	0V	2.8VDC	0V	4.2VDC
V 3	1U5	0V	17.5VDC	3VDC	-.1VDC	.9VDC	0V	1.4VDC
V 4	3V4	4.2VDC	65VDC	65VDC	0V	§.6VDC	.1VDC	7VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	1R5	*	†3.3KΩ	†3.3KΩ	100KΩ	*	3.5 Meg.	*
V 2	1U4	*	†3.3KΩ	†3.3KΩ	3.5 Meg.	*	10 Meg.	*
V 3	1U5	*	†900KΩ	†4.7 Meg	1 Meg.	300Ω	10 Meg.	*
V 4	3V4	*	†4KΩ	†3.3KΩ	Inf.	*	3.2 Meg.	*

†Measured From Output Of M4.

*DO NOT USE OHMMETER TO MEASURE FILAMENT RESISTANCE.

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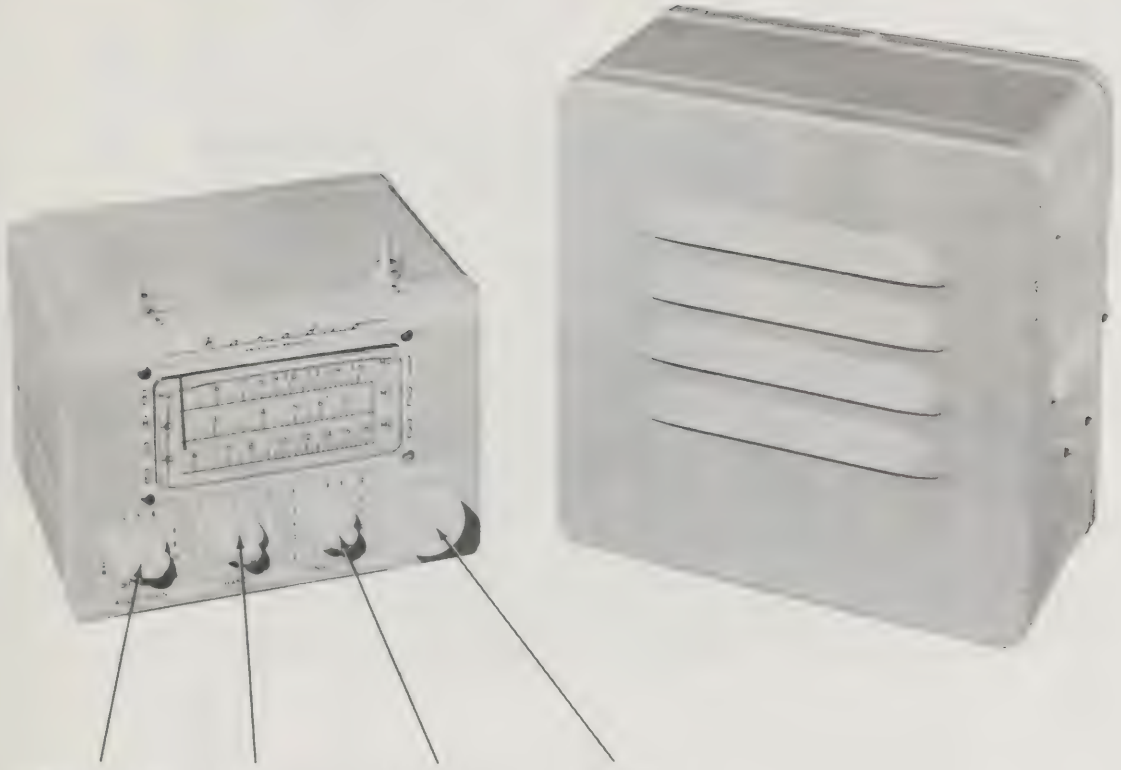
4914-9

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

KARADIO
MODEL 80-C



KARADIO
MODEL 80-C

KARADIO MODEL 80-C

TRADE NAME Karadio, Model 80-C
MANUFACTURER Eckstein Radio & Television Co., Leroy, Minnesota.
TYPE SET Battery Operated Mobile 3 Band Communications Superheterodyne Receiver.
TUBES (SIX) Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 DET-AVC-AF, 6AQ5 Power Output, 6X5 Rectifier.

POWER SUPPLY 6 Volt Storage Battery RATING 5.6 Amp. @ 6 Volts DC
TUNING RANGE—BROADCAST 540-1650KC **SHORT WAVE** 2.8-7.5MC. 5.8-17.5MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer, turn tuning cap. fully open and set pointer at the end of the dial scale. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to rear stator of tuning cap. Low side to chassis.	470KC	Band 1	Point of non-interference.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output.
2.	.1MFD	"	1600KC	"	1600KC	"	A5	"
3.	.1MFD	"	600KC	"	600KC	"	A6	Repeat steps 2 and 3.
4.	100MMF	High side through 100MMF to antenna connector. Low side to chassis.	1400KC	"	Tune for max. signal.	"	A7, A8	Adjust for maximum output.
5.	100MMF	"	7.5MC	Band 2	7.5MC	"	A9	"
6.	100MMF	"	3MC	"	3MC	"	A10	Adjust for maximum output. Repeat steps 5 and 6.
7.	100MMF	"	6.5MC	"	Tune for max. signal.	"	A11, A12	Adjust for maximum output.
8.	100MMF	"	17.5MC	Band 3	17.5MC	"	A13	"
9.	100MMF	"	16MC	"	Tune for max. signal.	"	A14, A15	"

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
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DATE 7/49 4914-10 SET #66 FOLDER #10

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		KARADIO PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET-AVC-AF Amp.	6AT6	6AT6	7BT	
V5	Power Output	6AQ5	6AQ5	7BZ	
V6	Rectifier	6X5	6X5GT	6S	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	KARADIO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	20	350		AF44J	UP2235		DY-2x20 -350	EL-220	■Filter ▲Filter
B	20	350					M-10-25	TA-10	Output Cath. Bypass
C2	10	25		PRS25/10	BR102A		ST-4-05	TM-15	AVC Filter
C3	.05	200		P288-05	GT2S5		ST-6-006	TM-26	AVC Filter Note
C4	.006	600		P688-006	GT6D6		ST-4-05	TM-15	AVC Filter
C5	.05	200		P288-05	GT2S5		MOS.5-31	MS-31	Fixed Trimmer Note
C6	100	500		1469-0001	5R5T1	NP0-334-100	ST-2-1	TM-1	RF Cath. Bypass
C7	.1	200		P288-1	GT2P1		ST-4-05	TM-15	RF Screen Bypass
C8	.05	400		P488-05	GT4S5		ST-4-05	TM-15	RF Bypass
C9	.05	400		P488-05	GT4S5		ST-4-05	TM-15	RF Bypass Note
C10	.05	400		P488-05	GT4S5		MO.5-31	1FM-31	Osc. Coupling
C11	100	500		1468-0001	5W5T1	GP1K-100	MOS.5-41	MS-41	Fixed Trimmer Note
C12	10			1469-00001	5R5Q1	NP0K-10	ST-4-05	TM-15	Osc. Anode Bypass
C13	.05	400		P488-05	GT4S5		ST-4-05	TM-15	AVC Filter Note
C14	.05	200		P288-05	GT2S5		ST-2-1	TM-1	IF Cath. Bypass
C15	.1	200		P288-1	GT2P1		ST-4-05	TM-15	IF Screen Bypass
C16	.05	400		P488-05	GT4S5		MO.5-325	1FM-325	Diode Filter
C17	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Diode Filter
C18	250	500		1468-00025	5W5T25	GP2K-250	ST-6-006	TM-26	Audio Coupling
C19	.006	600		P688-006	GT6D6	GP2M-005	ST-4-02	TM-12	Audio Coupling
C20	.015	400		P488-015	GT6S15				Fixed Padder Note
C21	1800	500					MOS.5-35	MS-35	Fixed Padder Note
C22	500	500		1469-0005	5R5T5		ST-6-01	TM-11	Output Plate Bypass
C23	.01	600		P688-01	GT6S1		STM-16 -006	MB-26	Buffer
C24	.006	1600		P1688-006	GT16D6				
C25	500	500		1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	Filament Bypass
C26	.5	100		P288-5	GT2P5		SHH-1	68P20	Hash Filter
C27	.5	100		P288-5	GT2P5		SHH-1	68P20	Hash Filter
C28	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Output Grid Bypass

Note-Not Used In All Models.

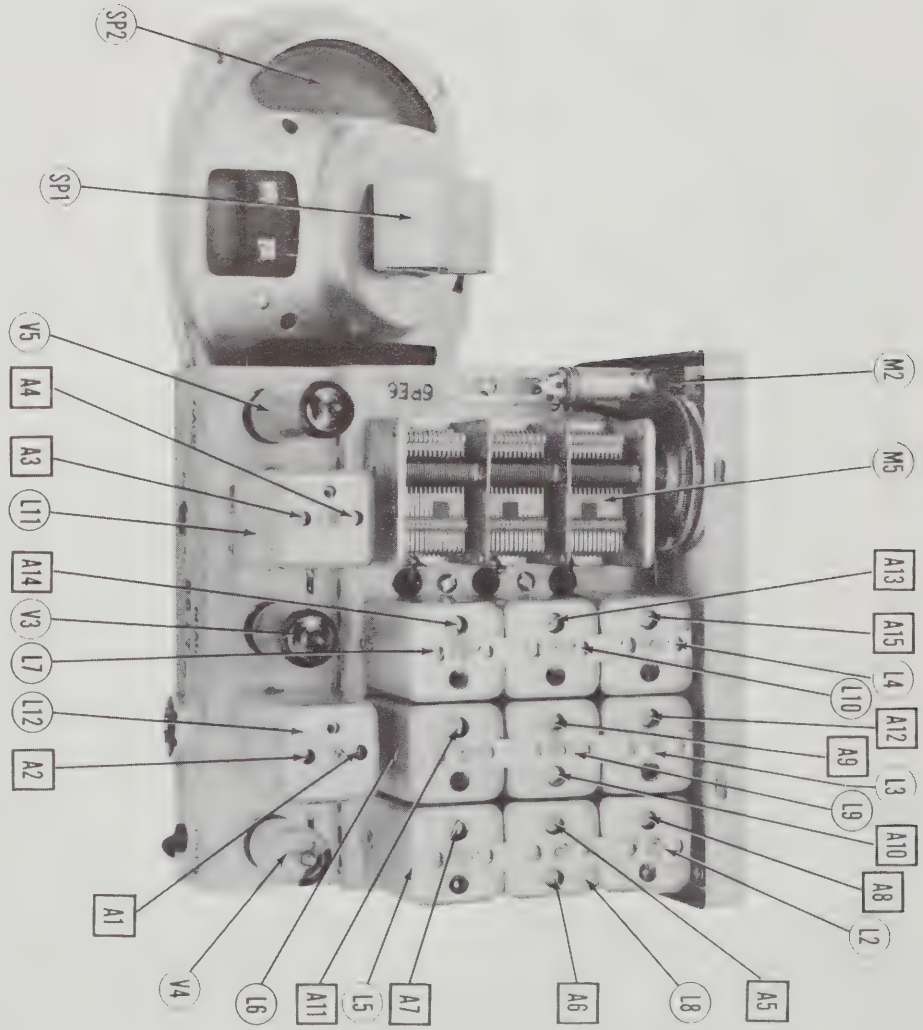
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	KARADIO PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	1 Meg	½		Q13-137	M-63-Z	Audio Gain Control
B	Switch			76-1	SW-A	Attach to R1A per instructions
R2	500KΩ	½		Q13-133	M-60-Z	Sensitivity Control

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	KARADIO PART No.	IRC PART No.	
R3	470KΩ	½		BTS-470K	RF Grid
R4	1 Meg	½		BTS-1 Meg	AVC Network
R5	150Ω	½		BW-½-150	RF Cathode
R6	12KΩ	½		BTS-12K	RF Screen
R7	100KΩ	½		BTS-100K	RF Plate

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	KARADIO PART No.	IRC PART No.	
R8	1 Meg	½		BTS-1 Meg	Conv. Grid See Note
R9	27KΩ	½		BTS-27K	Osc. Grid
R10	15KΩ	1		BTA-15K	Osc. Anode
R11	15KΩ	1		BTA-15K	Screen Dropping
R12	1 Meg	½		BTS-1 Meg	AVC Network
R13	150Ω	½		BW-½-150	IF Cathode
R14	12KΩ	½		BTS-12K	IF Screen
R15	47KΩ	½		BTS-47K	Diode Filter
R16	10 Meg	½		BTS-10 Meg	AF Grid
R17	470KΩ	½		BTS-470K	AF Plate
R18	470KΩ	½		BTS-470K	Output Grid
R19	450Ω	2		BW-2-470	Output Cathode
R20	56Ω	½		BW-½-56	Hash. Suppression
R21	56Ω	½		BW-½-56	Hash. Suppression
R22	220KΩ	½		BTS-220K	IF Coil Shunt

Note-Not Used In All Models.

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	KARADIO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 3.0A	530VCT @ .043A DC				P-4065†	VT-3	P-4071†

†Fabricate New Mounting Bracket.

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		KARADIO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	4300Ω	3.2Ω	280Ω	3.0Ω		A-3823	RO-8	A-2902	

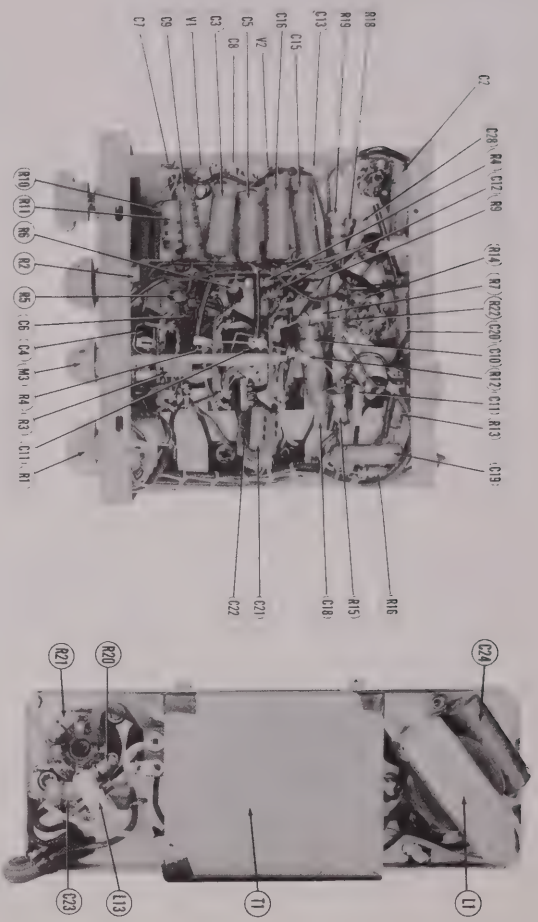
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			KARADIO PART No.	JENSEN PART No.	QUAM PART No.	
SP1	FIELD	V.C. IMP.		ST-108 MOD.P6-X	6A15	
	PM	3.2Ω				
	CONE DIA.	V.C. DIA.				
SP2	6"	9/16"				

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ∿)	KARADIO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
L1	.043A	375Ω	13H		C-1279	R-1240	C-2981	

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA KARADIO PART No.	REPLACEMENT DATA MEISSNER PART No.	
L2	Ant. Coil	33Ω	7Ω			Band 1
L3	Ant. Coil	4.5Ω	1Ω			Band 2
L4	Ant. Coil	2Ω	.5Ω			Band 3
L5	RF Coil	56Ω	7Ω			Band 1
L6	RF Coil	9Ω	1Ω			Band 2
L7	RF Coil	2.5Ω	.5Ω			Band 3
L8	Osc. Coil	.5Ω	.1Ω			Band 1
L9	Osc. Coil	.2Ω	0Ω			Band 2
L10	Osc. Coil	.1Ω	0Ω			Band 3
L11	Input IF	20Ω	17.5Ω			
L12	Output IF	20Ω	15Ω			
L13	RF Choke	3Ω				
L14	Hash Choke	.2Ω				
L15	Hash Choke	.2Ω				
L16	Hash Choke	.2Ω				

VIBRATOR

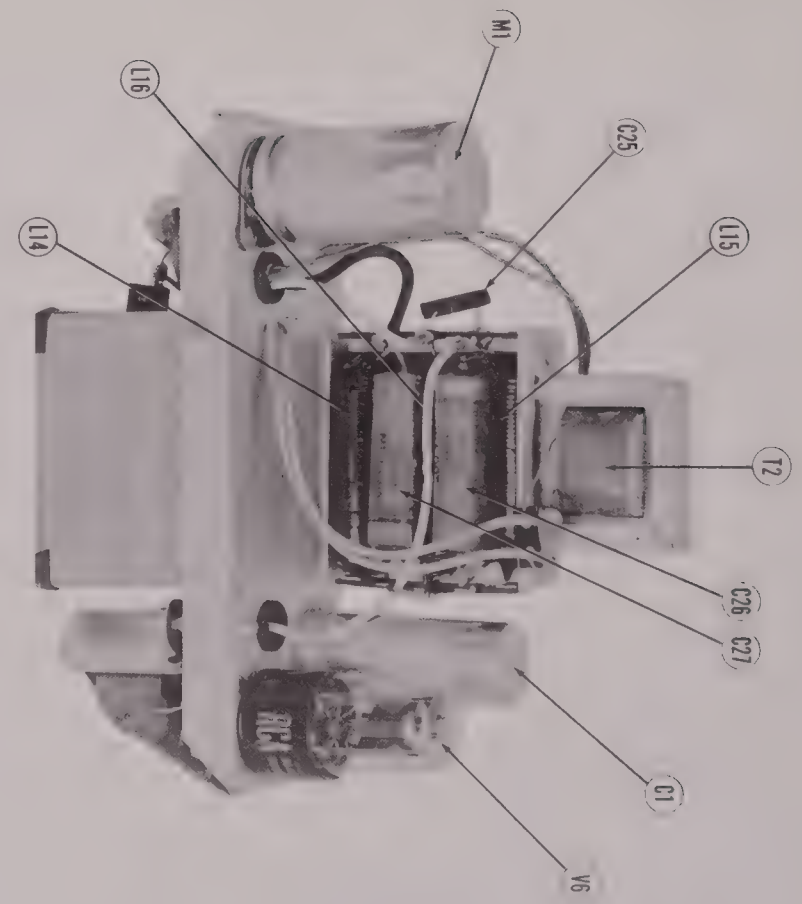
ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	REPLACEMENT DATA RADIART PART No.	INSTALLATION NOTES
M1	Int	6V	115∿		C-00	5300	

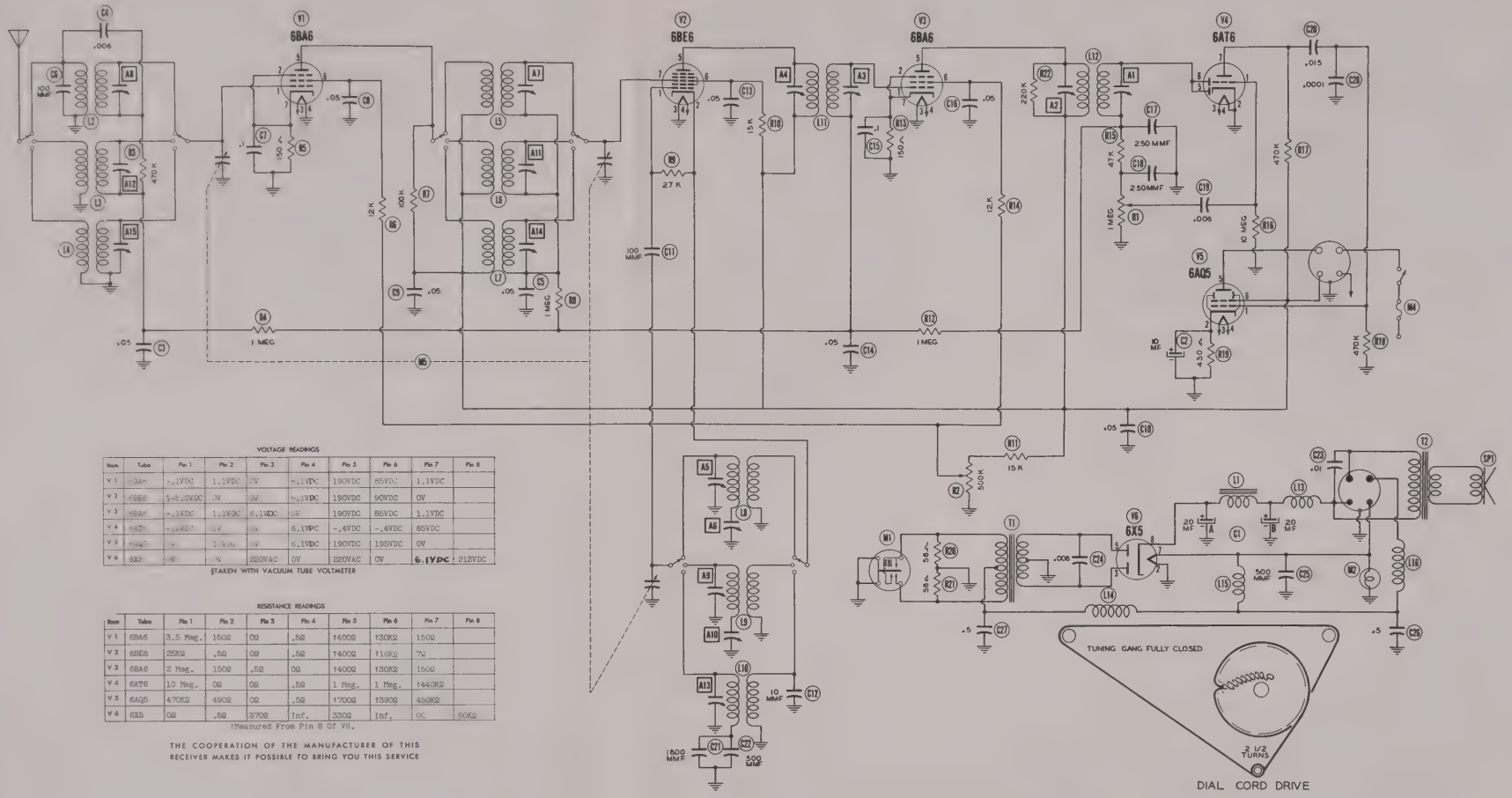
DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA KARADIO PART No.	REPLACEMENT DATA	NOTES
M2	Bayonet	6-8V	0.15A	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	KARADIO PART No.	NOTES
M3	Switch		Band
M4	Fuse		10 Amp.
M5	3 Gang Var. Cap.		Tuning





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	-.1VDC	1.1VDC	0V	-.1VDC	190VDC	85VDC	1.1VDC	
V 2	6BE6	1-5.2VDC	0V	0V	-.1VDC	190VDC	90VDC	0V	
V 3	6BA6	-.1VDC	1.1VDC	6.1VDC	0V	190VDC	85VDC	1.1VDC	
V 4	6AT6	-.4VDC	0V	0V	6.1VDC	-.4VDC	-.4VDC	65VDC	
V 5	6AQ5	0V	1.1VAC	0V	6.1VDC	190VDC	195VDC	0V	
V 6	6X5	0V	0V	220VAC	0V	220VAC	0V	6.1VDC	212VDC

TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	6BA6	3.5 Meg.	150Ω	0Ω	.5Ω	†400Ω	†30KΩ	150Ω	
V 2	6BE6	25KΩ	.5Ω	0Ω	.5Ω	†400Ω	†16KΩ	7Ω	
V 3	6BA6	2 Meg.	150Ω	.5Ω	0Ω	†400Ω	†30KΩ	150Ω	
V 4	6AT6	10 Meg.	0Ω	0Ω	.5Ω	1 Meg.	1 Meg.	†440KΩ	
V 5	6AQ5	470KΩ	490Ω	0Ω	.5Ω	†700Ω	†390Ω	450KΩ	
V 6	6X5	0Ω	.5Ω	370Ω	Inf.	330Ω	Inf.	0Ω	80KΩ

†Measured From Pin 8 Of V6.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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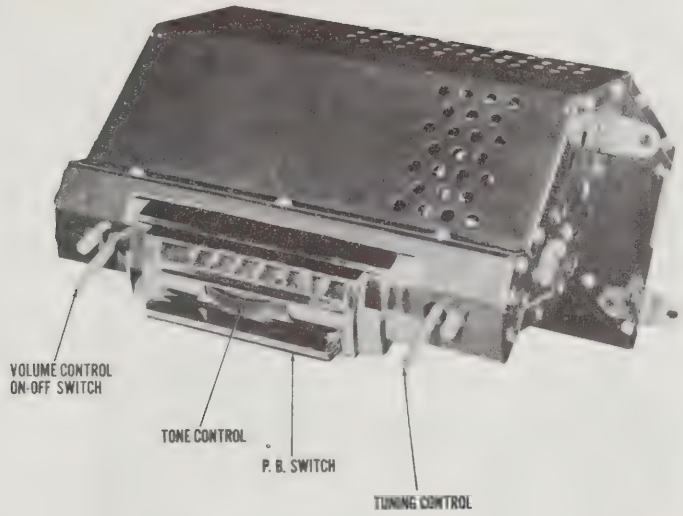


LINCOLN MODEL 7ML080

TRADE NAME	Lincoln, Models 7ML080 (5EH-18805-A), 7ML081 (5EH-18805-B)
MANUFACTURER	Lincoln-Mercury, Div. of Ford Motor Car Co., Detroit, Michigan
TYPE SET	Battery Operated Custom-Built Automotive Superheterodyne Receiver
TUBES (SEVEN)	Types 7A7 RF Amp., 7B8 Converter, 7A7 IF Amp., 7E6 DET.-AVC-AF, (2) 7C5 Power Output, 7Y4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 4.5 Amp. @ 6 Volts DC
TUNING RANGE—BROADCAST	540-1600KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Plug foot volume control in its socket during alignment.

Dummy antenna consists of two 30MMFD capacitors in series across output of sig. gen. Connect receiver antenna to the junction of the two cap. and low side of sig. gen. to chassis of receiver. This value of dummy antenna must be used to insure proper tracking when receiver is installed in car.

If calibration is off after completing adjustments it can be corrected with adjustment screw at pivot end of pointer arm.

If cores are adjusted, apply speaker cement to core screws.

Volume control should be at maximum position, output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to Pin 6 (Grid) of 7B8. Low side to chassis.	265KC	Tuning slugs fully out.	Across voice coil	A1,A2, A3,A4.	Adjust for maximum output.
2.	See pre-alignment notes.	See pre-alignment notes.	535KC	535KC	"	A5	" " " "
3.	"	"	1200KC	Tune for maximum output.	"	A6,A7, A8.	" " " "
	The following procedure should be followed only when a core or coil has been replaced.						
4.	See pre-alignment notes.	See pre-alignment notes.	1700KC	Tuning slugs fully out.	Across voice coil	A5,A6, A7,A8	Screw the cores completely out of the antenna, RF, Converter and oscillator coils. Adjust A5, A6, A7 & A8 for maximum output. Replace cores to their approximate original positions.
5.	"	"	1200KC	1200KC	"	A9	Adjust for maximum output.
6.	"	"	"	Tune for maximum output.	"	A10,A11 A12	Adjust for maximum output.
7.	"	"	600KC	"	"	A13	Rock tuning control and adjust for maximum output. Check receiver at 1200KC. If weak or off calibration repeat steps 5, 6, and 7.

After all adjustments have been made, reinstall receiver in car. Allow to warm up for at least fifteen minutes, and with antenna extended, tune in weak station near 1200KC and adjust A8 for maximum output.

"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed." "Reproduction or use, without express permission, of editorial or pictorial content, in any manner, is prohibited. No patent liability is assumed with respect to the use of the information contained herein. Copyright 1949 by Howard W. Sams & Co., Inc., Indianapolis Indiana, U. S. of America. Copyright under International Copyright Union. All rights reserved under Inter-American Copyright Union (1910) by Howard W. Sams & Co., Inc." Printed in U. S. of America

DATE 7/49 4914-11 SET #66 FOLDER 11

LINCOLN
MODELS 7ML080, 7ML081

LINCOLN
MODELS 7ML080, 7ML081

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA		RMA BASE TYPE	INSTALLATION NOTES
		ZENITH PART No.	STANDARD REPLACEMENT		
V1	RF Amp.	7A7	7A7	8V	
V2	Converter	7B8	7B8	8X	
V3	IF Amp.	7A7	7A7	8V	
V4	DET.-AVC-AF	7E6	7E6	8W	
V5	Power Output	7C5	7C5	6AA	
V6	Power Output	7C5	7C5	6AA	
V7	Rectifier	7Y4	7Y4	5AB	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING		REPLACEMENT DATA						IDENTIFICATION CODES AND INSTALLATION NOTES
	CAP.	VOLT	ZENITH PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	
C1A	20	400	22-1484	AFH44H4A	UP22450		DY-312	EL-322	▲ Filter
B	20	400							■ Filter
C	20	25							Output Cath. Bypass
C2	20	25	22-1483	PRS25/25	BR252A		M-25-25	TVA-6	AF Cath. Bypass
C3	4000	500	22-1244	1467-005	1D5D4	GP2M-005	MW.5-24	1FM-24	AVC Filter
C4	.1	200	22-190	P288-1	GT2P1		ST-2-1	TM-1	Cathode Bypass
C5	.1	400	22-170	P488-1	GT4P1		ST-4-1	TM-1	Decoupling
C6	1000	500	22-1169	1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	RF Coupling
C7	250	500	22-1136	1468-00025	5W5T25	GP2K-250	MOS.5-325	MS-325	Fixed Trimmer
C8	100	500	22-162	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Grid Cap.
C9	350		22-1478						Fixed Trimmer
C10	100	500	22-162	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	" "
C11	.05	200	22-250	P288-05	GT2S5		ST-4-05	TM-15	AVC Filter
C12	50	500	22-289	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	IF Coupling
C13	.02	200	22-1270	P488-02	GT2S2		ST-4-02	TM-12	Tone Comp.
C14	.02	200	22-1270	P488-02	GT2S2		ST-4-02	TM-12	Audio Coupling
C15	250	500	22-182	1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	AF Plate Bypass
C16	.1	400	22-1482	P488-1	GT4P1		ST-4-1	TM-1	Audio Coupling
C17	.02	200	22-1270	P488-02	GT2S2		ST-4-02	TM-12	Tone Comp.
C18	.003	600	22-1481	P688-003	GT6D3		ST-6-003	TM-23	Output Plate Bypass
C19	.003	600	22-1481	P688-003	GT6D3		ST-6-003	TM-23	" " "
C20	.1	400	22-170	P488-1	GT4P1		ST-4-1	TM-1	Switch Bypass
C21	.008	1600	22-1448		GT16D8		STM-16-008	MB-28	Buffer
C22	.5	120	22-908	P288-5	GT2P5		SHH-1	68P20	Hash Filter
C23	.5	120	22-908	P288-5	GT2P5		SHH-1	68P20	" "
C24	.5	120	22-908	P288-5	GT2P5		SHH-1	68P20	" " Note

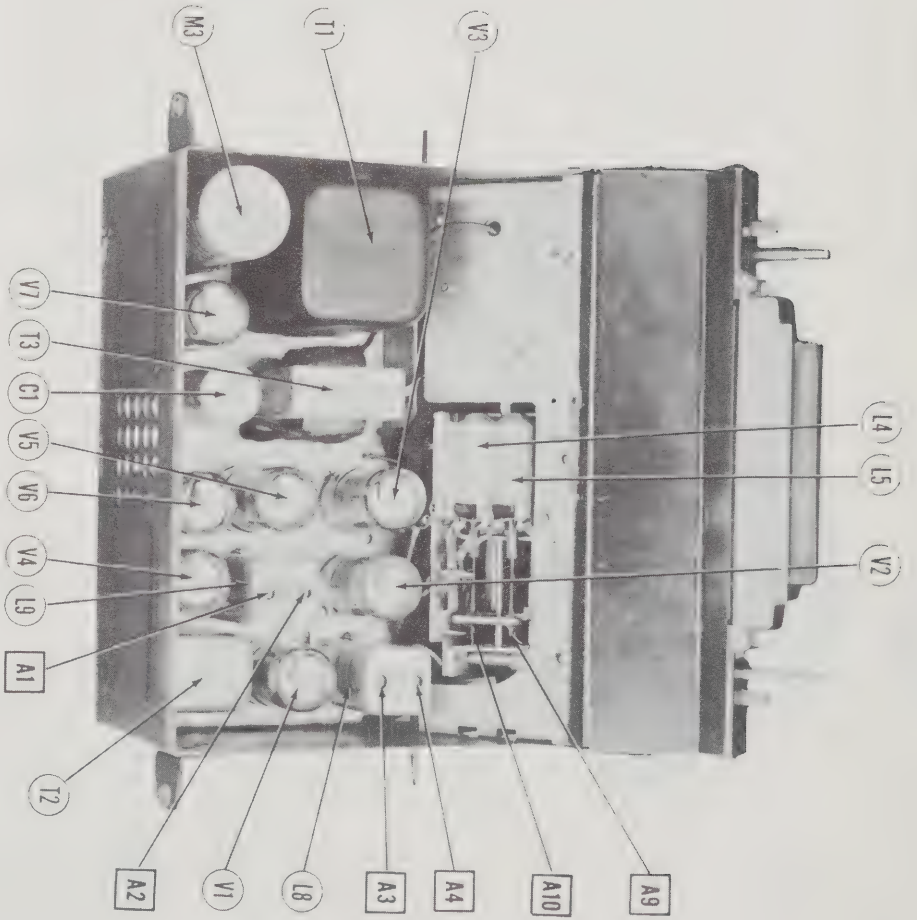
Note. Not used in all models.

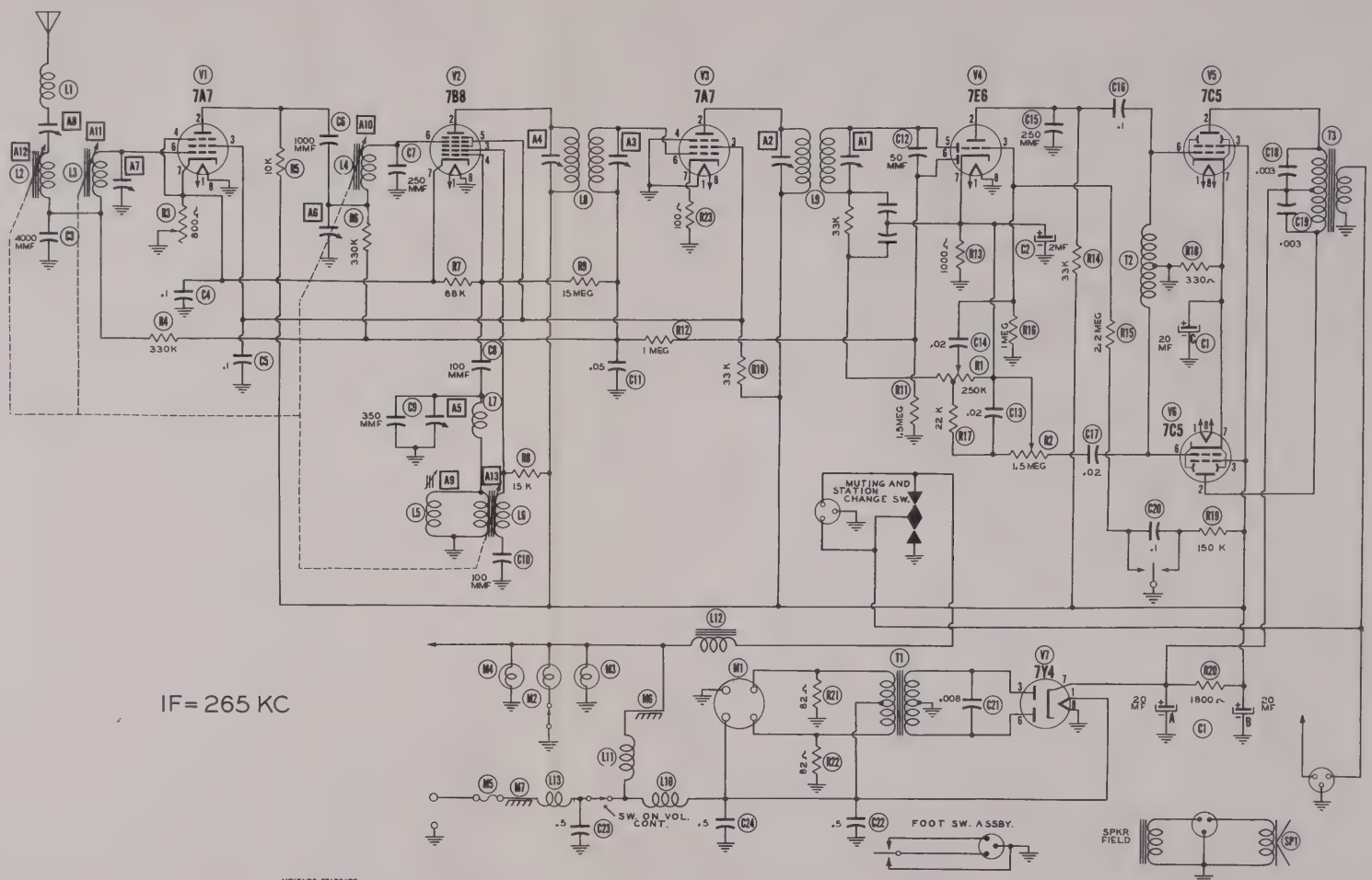
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	250KΩ	½	63-1385	418-130X	AT-45#	Volume control
B	Shaft			NQ	RS-3/16	Attach to R1A per instructions
C	Switch			76-1	SW-A	" " " " "
R2	1.5 Meg	½	63-1384			Tone control
R3	80KΩ	½	63-1379			Senisitivity control

Use tap one.

CHASSIS—TOP VIEW





VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	7A7	0V	200VDC	80VDC	3.2VDC	0V	-.1VDC	3.2VDC	6.3VDC
V 2	7B8	6.3VDC	225VDC	165VDC	§-10VDC	80VDC	-.1VDC	3.2VDC	0V
V 3	7A7	0V	225VDC	80VDC	0V	0V	-.1VDC	.8VDC	6.3VDC
V 4	7E6	6.3VDC	100VDC	0V	3.6VDC	1.4VDC	-.1VDC	3.6VDC	0V
V 5	7C5	0V	280VDC	235VDC	0V	0V	0V	14VDC	6.3VDC
V 6	7C5	0V	280VDC	235VDC	0V	0V	0V	14VDC	6.3VDC
V 7	7Y4	0V	0V	300VAC	0V	0V	300VAC	280VDC	6.3VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	7A7	0Ω	†11.5KΩ	†32KΩ	310Ω	0Ω	2.5 Meg.	310Ω	.1Ω
V 2	7B8	.1Ω	†1.8KΩ	†18KΩ	68KΩ	†32KΩ	2.5 Meg.	310Ω	0Ω
V 3	7A7	0Ω	†1.8KΩ	†32KΩ	0Ω	0Ω	2 Meg.	100Ω	.1Ω
V 4	7E6	.1Ω	†35KΩ	1 Meg.	1000Ω	300KΩ	1.5 Meg.	1000Ω	0Ω
V 5	7C5	0Ω	†170Ω	†1.8KΩ	Inf.	Inf.	1.8KΩ	320Ω	.1Ω
V 6	7C5	0Ω	†190Ω	†1.8KΩ	Inf.	Inf.	2.1KΩ	320Ω	.1Ω
V 7	7Y4	0Ω	Inf.	220Ω	Inf.	Inf.	240Ω	110KΩ	.1Ω

†Measured From Pin 7 Of V7.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Battery voltage maintained at 6 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	ZENITH PART No.	IRC PART No.	
R4	330KΩ	½	63-1392	BTS-330K	RF Grid
R5	10KΩ	½	63-1402	BTS-10K	RF Plate
R6	330KΩ	½	63-1392	BTS-330K	Conv. Grid
R7	68KΩ	½	63-1396	BTS-68K	Osc. Grid
R8	15KΩ	½	63-1401	BTS-15K	Osc. Plate
R9	15 Meg.	½	63-1406	BTS-15 Meg.	AVC Network
R10	33KΩ	1	63-1398	BTA-33K	Screen Dropping
R11	1.5 Meg.	½	63-1407	BTS-1.5 Meg.	Diode Load
R12	1 Meg.	½	63-1390	BTS-1 Meg.	AVC Network
R13	1000Ω	½	63-1409	BTS-1000	AF Cathode
R14	33KΩ	½	63-1390	BTS-33K	AF Plate
R15	2.2 Meg.	½		BTS-2.2 Meg.	Muting Network
R16	1 Meg.	½	63-1390	BTS-1 Meg.	AF Grid
R17	22KΩ	½	63-1395	BTS-22K	Tone Compensation
R18	330Ω	2	63-1371	BW-2-330	Output Cathode
R19	150KΩ	½	63-1408	BTS-150K	Muting Network
R20	1800Ω	3	63-1370	AB-1750	Filter
R21	82Ω	½	63-1399	BW-½-82	Hash Suppression
R22	82Ω	½	63-1399	BW-½-82	" "
R23	100Ω	½		BW-½-100	IF Cathode

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	ZENITH PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 4.5A	560VCT @ .060 ADC			95-948	P-4062 †	VT-2	P-4071 †

† Drill new mounting holes.

COUPLING CHOKE

ITEM No.	RATING		REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE	DC RES.	ZENITH PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
T2	Matched to P-P Grids.	1500Ω CT	95-946				

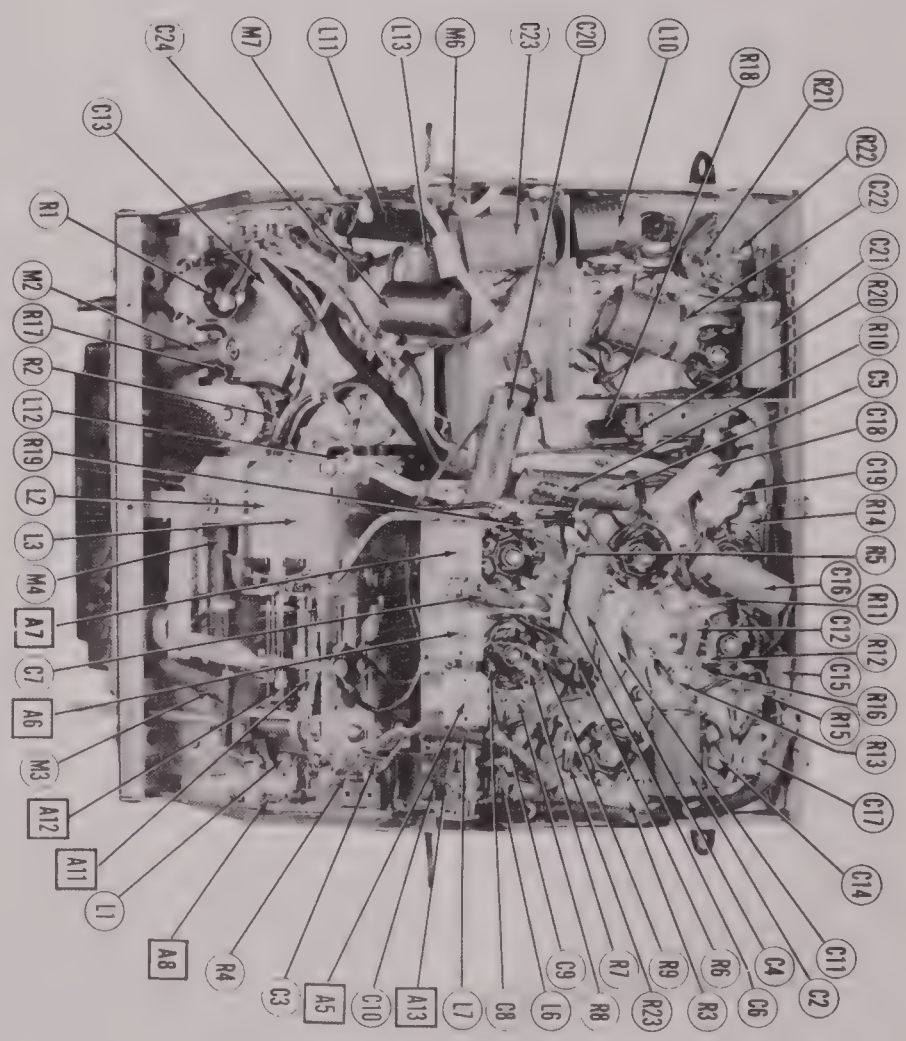
TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		ZENITH PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T3	12000Ω CT	3.5Ω	375Ω CT	.3Ω	95-947	A-3823	RO-302	A-2936	

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	ZENITH PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	4Ω	3.2Ω	49-543 ‡			‡ Used in model 7ML080
B	4Ω	3.2Ω	49-539 §			§ Used in model 7ML081
	CONE DIA.	V. C. DIA.				
SP2A	6" x 9"	3/4"	208-543 ‡			
B	6" x 9"	3/4"	208-539 §			

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

R F COILS

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA MEISSNER PART No.
L1	Ignition Chk.	1Ω		S8819	
L2	Ant. Coil	11.5Ω		S12060	
L3	RF Coil	11.5Ω		S-12060	
L4	RF Coil	11.5Ω		S-12060	
L5	Osc. Tuning	3Ω		S-12053	
L6	Osc. Shunt	4.5Ω	7.5Ω	S11231	
L7	Osc. Series	1Ω		S11229	
L8	Input IF	40	40	95-944	16-6652
L9	Output IF	59Ω	59Ω	95-945	16-6679
L10	Hash Choke	0Ω		20-313	
L11	Hash Choke	0Ω		S12233	
L12	Tuning Solenoid	.5Ω		S10829	
L13	Hash Choke	0Ω			

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA ZENITH PART No.	REPLACEMENT DATA CORNELL-DUBILIER PART No.	REPLACEMENT DATA RADIART PART No.	INSTALLATION NOTES
M1	Int.	6V	115∿	190-22A	C00	5300	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA ZENITH PART No.		NOTES
M2	Bayonet	6-8	.25	Blue	100-32		Type #44
M3	Bayonet	6-8	.25	Blue	100-32		Type #44
M4	Bayonet	6-8	.25	Blue	100-32		Type #44

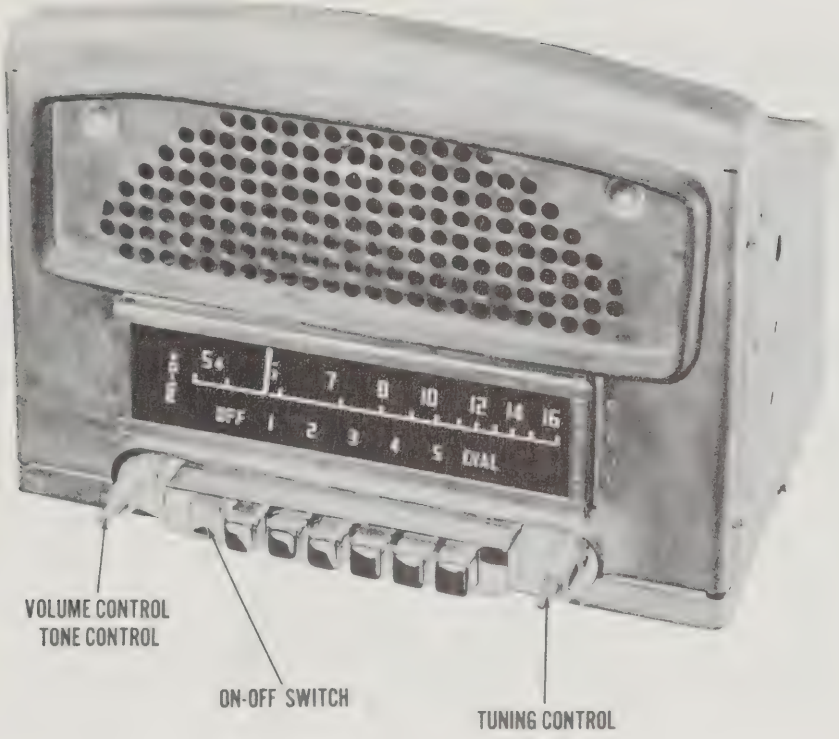
MISCELLANEOUS

ITEM No.	PART NAME	ZENITH PART No.	NOTES
M5	Fuse	136-12	20 Amp.
M6	Spark Plate		
M7	Spark Plate		
A5	Dual Trimmer	22-1479	Osc. Adj.
A6	Dual Trimmer	22-1479	RF Adj.
A7	Trimmer	22-1480	Ant. Sec. Adj.
A8	Trimmer	22-1420	Ant. Pri. Adj.
	Dial Scale	26-353	

ADJUST-O-MATIC TUNING

1. Press station selector touch bar until green dot appears in dial scale background. Press the touch bar once more to advance Adjust-O-Matic mechanism to the No. 1 position.
2. Pull manual tuning knob outward to engage the Adjust-O-Matic mechanism.
3. Select the station desired and tune to its frequency by turning the tuning knob. Tune very carefully for clearest reception.
4. Press station selector bar, pull tuning knob outward and tune in station desired for No. 2 position. Use same procedure for positions No. 3, 4 and 5.

MOPAR
MODEL 803 (PHILCO PD-4908)



MOPAR
MODEL 803 (PHILCO PD-4908)

TRADE NAME	Mopar, Model 803 (Philco PD-4908)
SUPPLIER	Chrysler Corp., Detroit 31, Michigan
TYPE SET	Battery Operated Custom Built Automotive Superheterodyne Receiver
TUBES (Eight)	Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AV6 Det-AVC-AF, 6C4 Phase Inverter, (2) 6AQ5 Power Output, 6X4 Rectifier
POWER SUPPLY	6 Volt Storage Battery — RATING 8 Amps. @ 6 Volts DC
TUNING RANGE—BROADCAST	530-1605 KC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning slugs fully closed and set pointer to last reference mark at low frequency end of dial. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.
The dummy antenna used consists of a 40MMF capacitor in series with the high side of the signal generator and the antenna receptacle. Connect another 40MMF capacitor from the antenna receptacle to chassis. (Bottom plate must be on).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	DEPRESS PUSH BUTTON	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.05MFD	High side to pin 7 (grid) of 6BE6 (V2). Low side to chassis.	455KC	Manual	1600 KC	Across voice coil	A1, A2, A3, A4	Adjust for maximum output.
2.	Dummy (see above)	High side to antenna receptacle. Low side to chassis.	"	Any Station - Selector Button		"	A5	Adjust for minimum output.
3.	"	"	1605KC	Manual	Slugs fully out.	"	A10	Adjust for maximum output.
4.	"	High side thru dummy to antenna receptacle. Low side to chassis.	580KC	"	580KC	"	A6	Rock tuning gang and adjust for maximum output.
5.	"	"	1605KC	"	Tune for maximum signal	"	A7, A8	Adjust for maximum output.
6.	"	"	"	PB#5	Tune PB for maximum signal	"	A9	Adjust for maximum output. Repeat steps 3, 4 and 5 until no further improvement can be made.
7.	Install receiver in car, and manually tune in a weak station near 1400KC. Adjust A7 for maximum volume. Depress PB#5 and tune in same weak station near 1400KC and adjust A9 for maximum volume.							

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: MOPAR-PHILCO PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Converter	6BE6	6BE6	7CH	
V3	IF Amp.	6BA6	6BA6	7BK	
V4	DET-AVC-AF	6AV6	6AV6	7BT	
V5	Phase Inverter	6C4	6C4	6BG	
V6	Power Output	6AQ5	6AQ5	7BZ	
V7	Power Output	6AQ5	6AQ5	7BZ	
V8	Rectifier	6X4	6X4	5BS	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: MOPAR-PHILCO PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	30	350	60-0150	AF42H1G2A	UP			EL-415	◓Filter
B	10	350			11145C				▣Filter
C	5	300							▲Filter
D	10	25							Output Cath. Bypass
C2	.047	200	61-0122	P288-047	GT2S5		ST-4-05	TM-15	RF Cath. Bypass
C3	.047	200	61-0122	P288-047	GT2S5		ST-4-05	TM-15	Decoupling
C4	100	300	60-10205 307	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	RF Coupling
C5	.047	200	61-0122	P288-047	GT2S5		ST-4-05	TM-15	AVC Filter
C6	100	300	60-10105 407	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Osc. Grid Cap
C7	54		61-0149						Fixed Trimmer ± 5%
C8	.047	200	61-0122	P288-047	GT2S5		ST-4-05	TM-15	IF Cath. Bypass
C9	.0047	600	45-3502	P688-0047	GT6D5	GP2M-005	ST-6 -0047	TM-25	Audio Coupling
C10	220	500	45-3502	1468-0002	5W5T2	GP2K-200	MO.5-32	1FM-32	AF Plate Bypass
C11	.01	400	61-0120	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tone Compensation
C12	.25	150	61-0125	P488-25	GT2P25		ST-2-25	68P24	Tone Compensation
C13	.1	200	61-0113	P288-1	GT2P1		ST-2-1	TM-1	Tone Compensation
C14	.0047	600	45-3502	P688-0047	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C15	.01	400	61-0120	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C16	.01	400	61-0120	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C17	.0068	1000	45-3500-7	P1088-0068	GT16D6		STM-16 -006	MB-26	Output Plate Bypass
C18	.0033	1600	61-0109	P1688-0033	GT16D3		STM-16 -003	MB-23	Buffer
C19	330	500	62-13300 1001	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	RF Bypass
C20	330	500	62-13300 1001	1468-0003	5W5T3	GP2K-300	MO.5-33	1FM-335	RF Bypass

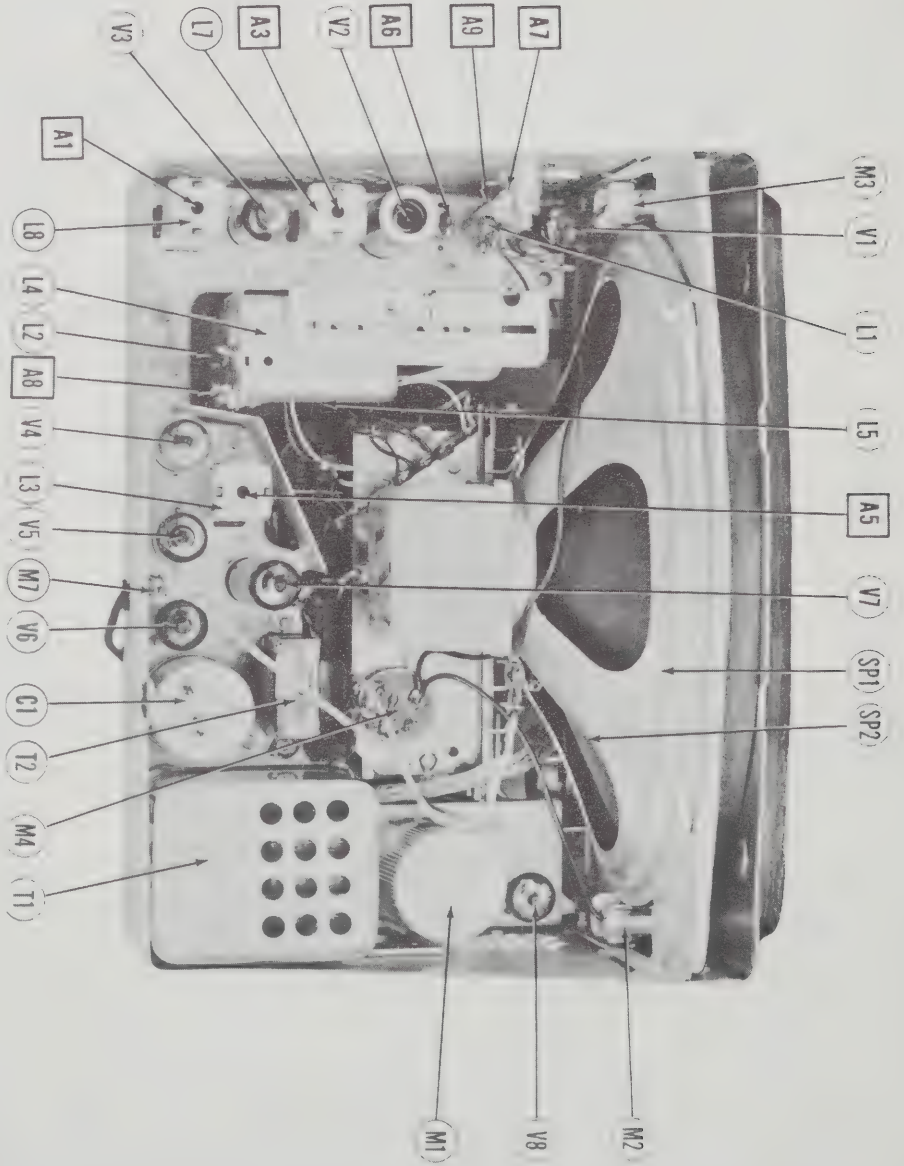
CONTROLS

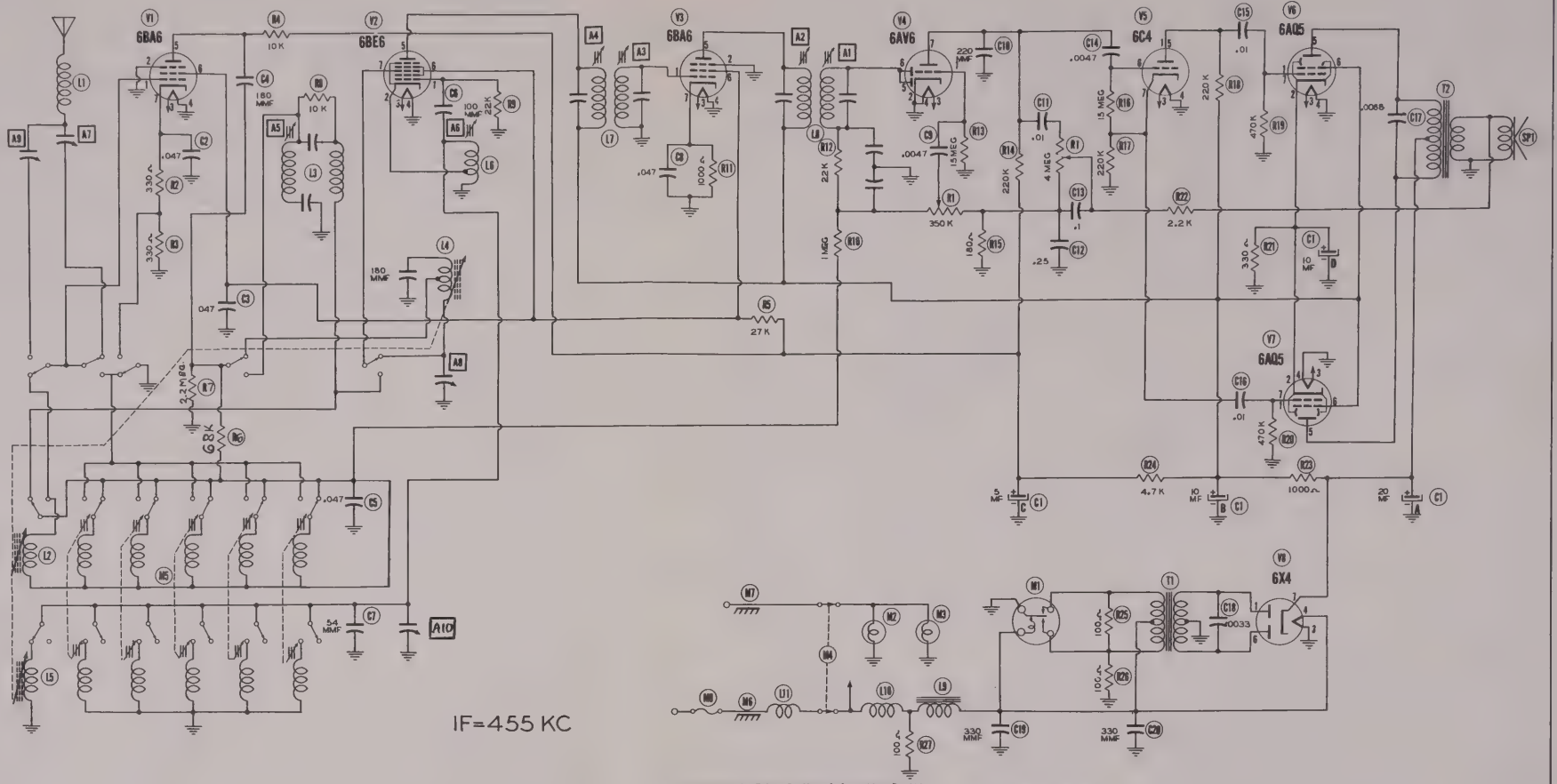
ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-PHILCO PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	350KΩ	½	33-5557-4			Volume control (Dual Concentric)
B	4 Meg.	½				Tone control. (Open at center.)

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: MOPAR-PHILCO PART No.	IRC PART No.	IDENTIFICATION CODES
R2	330Ω	½	66-1333340	BW-½-330	RF Cathode
R3	330Ω	½	66-1333340	BW-½-330	RF Cathode
R4	10KΩ	½	66-3103340	BTS-10K	RF Plate
R5	27KΩ	1	66-3273340	BTA-27K	Screen Dropping
R6	68KΩ	½	66-3683340	BTS-68K	Converter Grid

CHASSIS—TOP VIEW





All Measurements Taken In Manual Operating Position.

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	-.1VDC	0V	6VDC	0V	175VDC	55VDC	1.6VDC
V 2	6BE6	§-2.4VDC	0V	6VDC	0V	230VDC	55VDC	-.5VDC
V 3	6BA6	0V	0V	6VDC	0V	230VDC	55VDC	2.3VDC
V 4	6AV6	-.7VDC	0V	0V	6VDC	-.5VDC	-.5VDC	90VAC
V 5	6C4	125VDC	190VDC	6VDC	0V	125VDC	.2VDC	100VDC
V 6	6AQ5	0V	14VDC	6VDC	0V	245VDC	230VDC	0V
V 7	6AQ5	0V	14VDC	0V	6VDC	245VDC	230VDC	0V
V 8	6X4	290VAC	0V	0V	6VDC	0V	290VAC	250VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	800KΩ	0Ω	.2Ω	0Ω	*16KΩ	*34KΩ	650Ω
V 2	6BE6	22KΩ	.8Ω	.2Ω	0Ω	*1000Ω	*34KΩ	68KΩ
V 3	6BA6	12Ω	0Ω	.2Ω	0Ω	*1000Ω	*34KΩ	1000Ω
V 4	6AV6	15 Meg.	0Ω	0Ω	.2Ω	320KΩ	320KΩ	*225KΩ
V 5	6C4	*220KΩ	*6KΩ	.2Ω	0Ω	*220KΩ	15 Meg.	220KΩ
V 6	6AQ5	470KΩ	330Ω	.2Ω	0Ω	*210Ω	*1000Ω	470KΩ
V 7	6AQ5	470KΩ	330Ω	0Ω	.2Ω	*180Ω	*1000Ω	470KΩ
V 8	6X4	430Ω	Inf.	0Ω	.2Ω	Inf.	400Ω	120KΩ

*Measured From Pin 7 Of V8.

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	MOPAR-PHILCO PART No.	IRC PART No.	
R7	2.2 Meg.	½	66-5223340	BTS-2.2 Meg.	AVC Network
R8	10KΩ	½	66-3103340	BTS-10K	RF Coil Shunt
R9	22KΩ	½	66-3223340	BTS-22K	Osc. Grid
R10	1 Meg.	½	66-5103340	BTS-1 Meg.	AVC Network
R11	1000Ω	½	61-0122	BTS-1000	IF Cathode
R12	22KΩ	½	66-3223340	BTS-22K	Diode Filter
R13	15 Meg.	½	66-6153340	BTS-15 Meg.	AF Grid
R14	220KΩ	½	66-4223340	BTS-220K	AF Plate
R15	180Ω	½	66-1183340	BW-½-180	Tone Compensation
R16	15 Meg.	½	66-6153340	BTS-15 Meg.	Phase Inverter Grid
R17	220KΩ	½	66-4223340	BTS-220K	Phase Inverter Cathode
R18	220KΩ	½	66-4223340	BTS-220K	Phase Inverter Plate
R19	470KΩ	½	66-4473340	BTS-470K	Output Grid
R20	470KΩ	½	66-4473340	BTS-470K	Output Grid
R21	330Ω	1	66-1334340	BTA-330Ω	Output Cathode
R22	2200Ω	½	66-2223340	BTS-2200	Feedback
R23	1000Ω	1	66-2104340	BW-1-1000	Filter
R24	4700Ω	1	66-2474340	BW-1-4700	Filter
R25	100Ω	1	66-1104340	BW-1-100	Hash Suppression
R26	100Ω	1	66-1104340	BW-1-100	Hash Suppression
R27	100Ω	1	66-1104340	BW-1-100	Hash Suppression

TRANSFORMER (VIBRATOR)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	MOPAR-PHILCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1	6VDC @ 4.2A	580VCT .057A DC			32-8314-3		VT-5	

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		MOPAR-PHILCO PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T2	7.8KΩ CT	3.4Ω	400Ω CT	.2Ω	32-8316-3	A-3856*	RO-302*	A-2900*	*Drill One New Mounting Hole

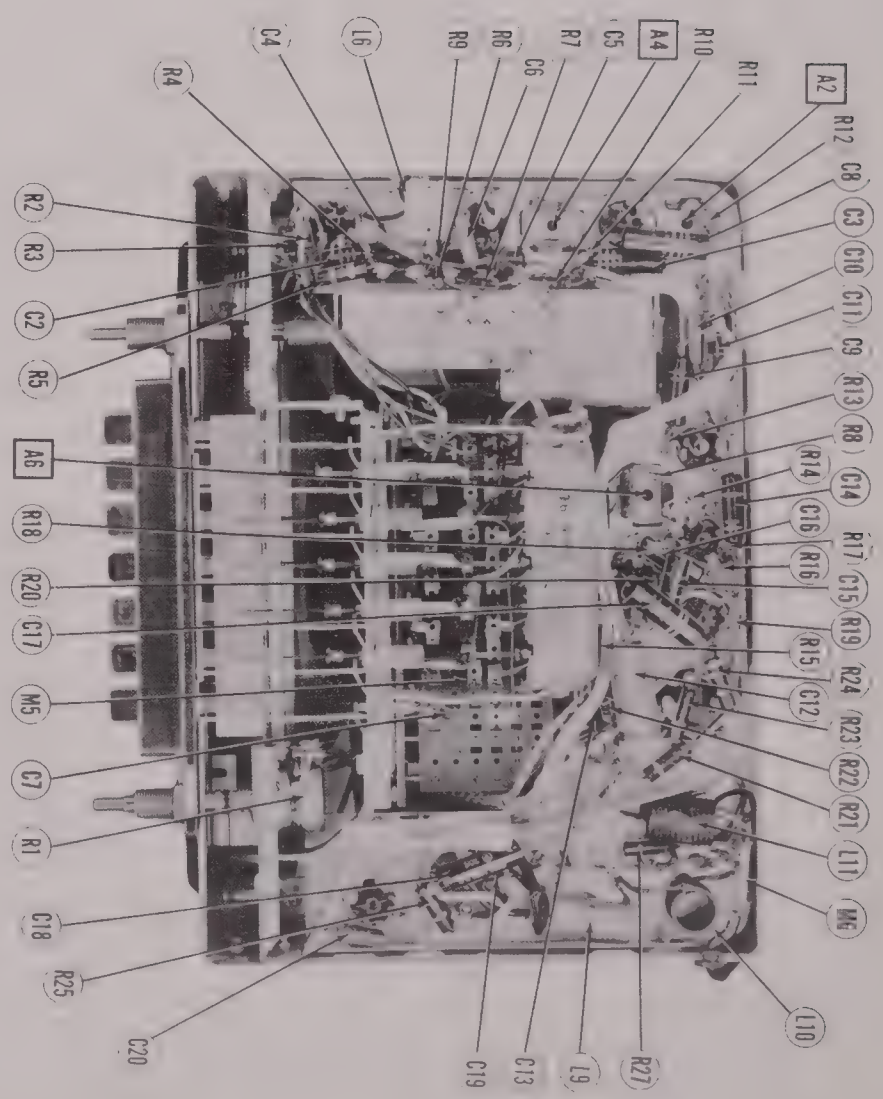
SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			MOPAR-PHILCO PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V.C. IMP.		ST-810		
SP1	PM	3.4Ω	36-1631	MOD.P69-V	69A3	
	CONE DIA.	V.C. DIA.				
SP2	6"x9"	1"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	MOPAR-PHILCO PART No.	MEISSNER PART No.	
L1	Ant. Choke	6Ω		65-0437		L2, 4, and 5 are permeability tuned, and in Gang.
L2	Ant. Coil	0Ω		65-0443-16		
L3	RF Coil	30Ω	25Ω	32-4349A		Used Only With Push Button Tuning
L4	RF Coil	11Ω		56-3612-7		Used Only With Manual Tuning
L5	Osc. Shunt Coil	4Ω		56-3612-7		
L6	Osc. Coil	5Ω		32-4110-2		
L7	Input IF	12Ω	12Ω	32-4160A	16-6668	
L8	Output IF	16Ω	16Ω	32-4240A		
L9	Vibrator Choke	.2Ω		32-4170-2		
L10	Noise Choke	0Ω				
L11	Noise Choke	0Ω		32-1644		

CHASSIS—BOTTOM VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

VIBRATOR

ITEM No.	TYPE	INPUT VOLTS	FREQUENCY	REPLACEMENT DATA			INSTALLATION NOTES
				MOPAR-PHILCO PART No.	CORNELL-DUBILIER PART No.	RADIART PART No.	
M1	Int.	6.0V	115∿	83-0026 or 83-0025	C26P	5326P	

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					MOPAR-PHILCO PART No.		
M2	Bayonet	6-8V	0.2A	White	34-2039		Type #51
M3	Bayonet	6-8V	0.2A	White	34-2039		Type #51

MISCELLANEOUS

ITEM No.	PART NAME	MOPAR-PHILCO PART No.	NOTES
M4	Switch		On-Off
M5	Push Button Assembly	76-4560	Tuning Unit
M6	Spark Plate	30-1235	
M7	Spark Plate	30-1235	
M8	Fuse	57-4273	14 Amp.
	Dial Scale	56-6681	
	Dial Pointer	56-6684	

PUSHBUTTON ADJUSTMENTS

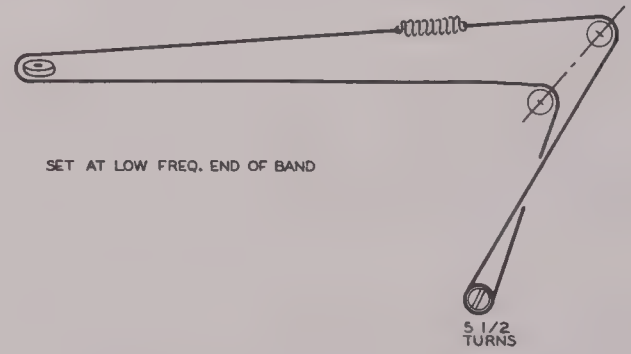
The ranges of the pushbuttons are as follows.

PB#1	530-1020KC
PB#2	610-1200KC
PB#3	700-1410KC
PB#4	740-1500KC
PB#5	840-1605KC

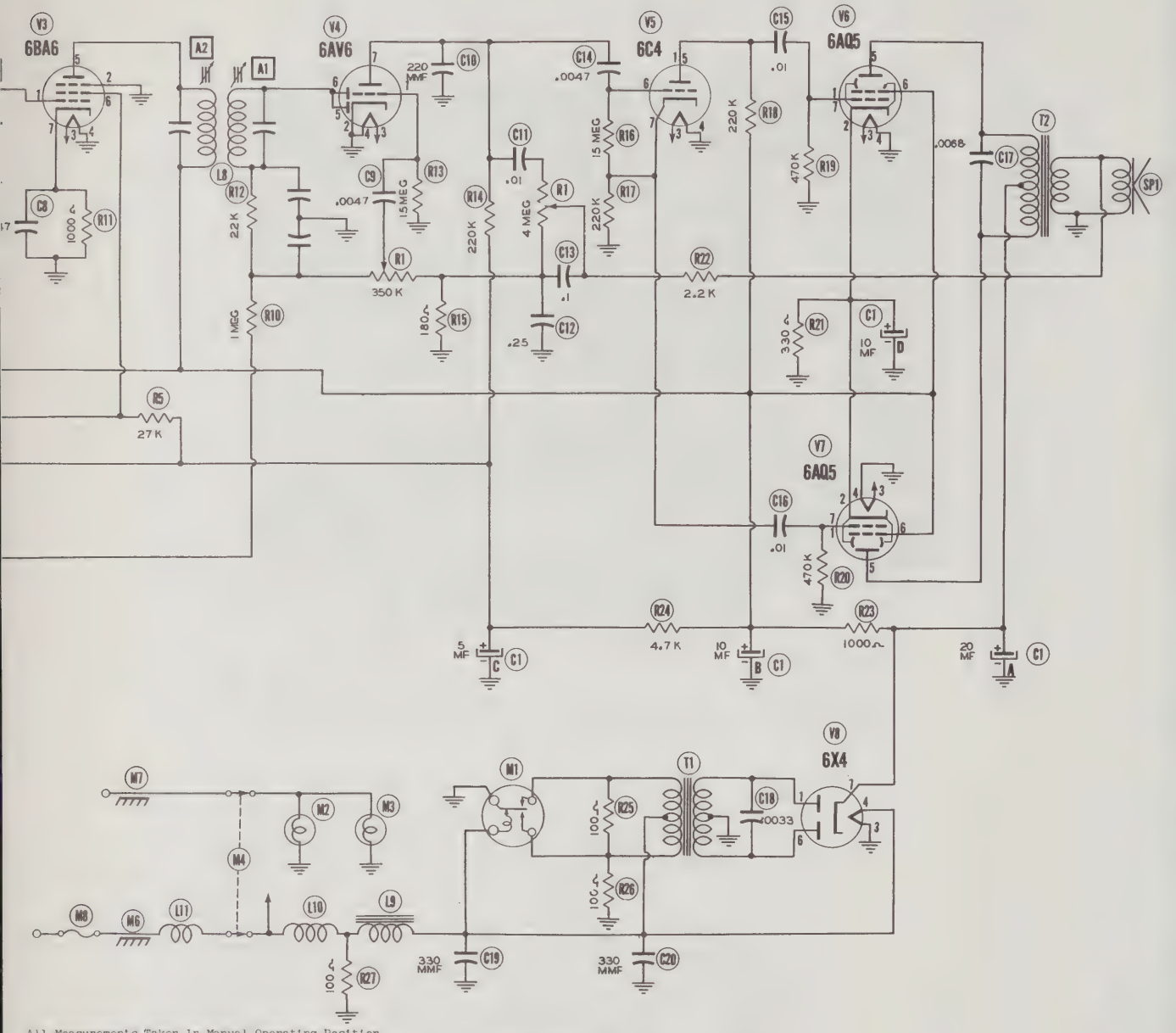
Make up a list of five stations desired to be received by pushbutton making sure their frequencies fall within the limits of the individual pushbuttons.

Adjustment of the individual pushbuttons is as follows:

1. Allow receiver to warm up for about 15 minutes and remove button knobs.
2. Depress the "Dial" button and tune in desired station within the range of PB#1.
3. Depress PB#1 and pull out on the knurled button and tune in the station obtained in Step 2.
4. Repeat the procedure in Steps 2 and 3 to set up the remaining pushbuttons.



DIAL CORD DRIVE



All Measurements Taken In Manual Operating Position.

Pin 6	Pin 7
VDC	1.6VDC
VDC	-.5VDC
VDC	2.3VDC
5VDC	90VAC
VDC	100VDC
OVDC	0V
OVDC	0V
OVAC	250VDC

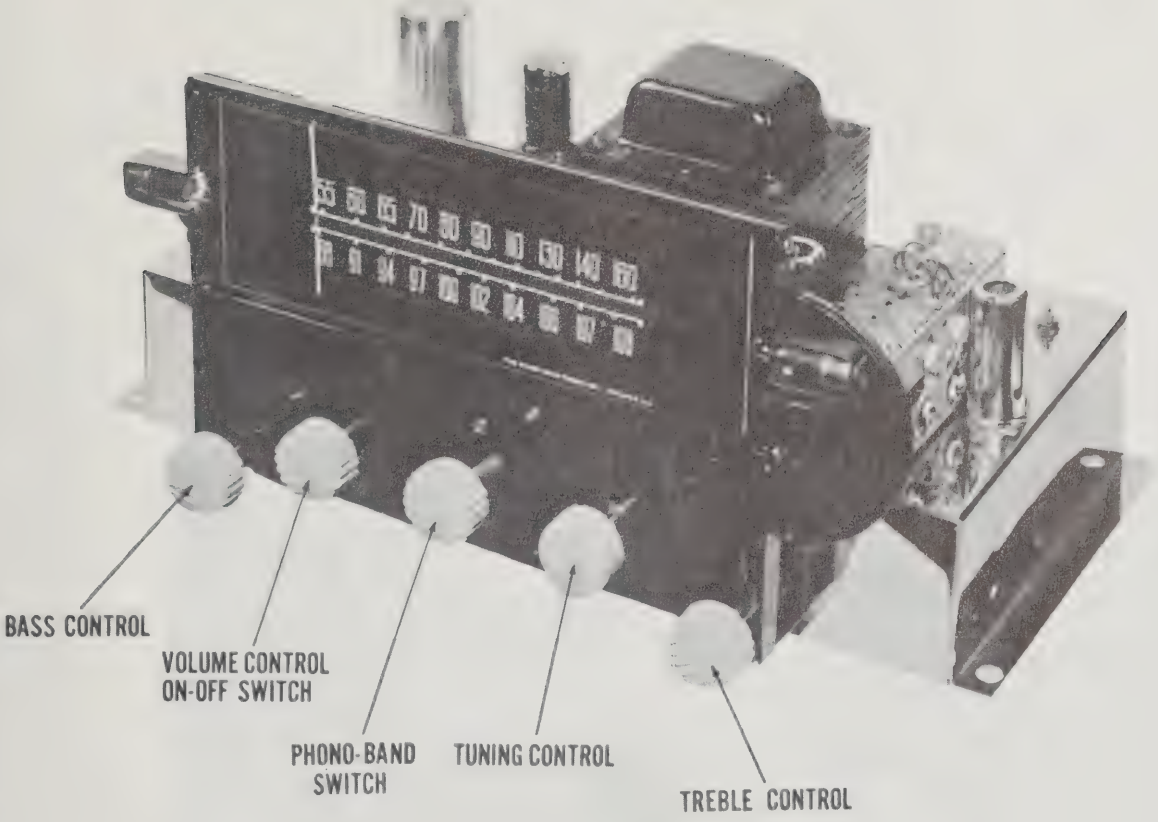
RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7
V 1	6BA6	800KΩ	0Ω	.2Ω	0Ω	*16KΩ	*34KΩ	650Ω
V 2	6BE6	22KΩ	.8Ω	.2Ω	0Ω	*1000Ω	*34KΩ	68KΩ
V 3	6BA6	12Ω	0Ω	.2Ω	0Ω	*1000Ω	*34KΩ	1000Ω
V 4	6AV6	15 Meg.	0Ω	0Ω	.2Ω	320KΩ	320KΩ	*225KΩ
V 5	6C4	*220KΩ	*6KΩ	.2Ω	0Ω	*220KΩ	15 Meg.	220KΩ
V 6	6AQ5	470KΩ	330Ω	.2Ω	0Ω	*21Ω	*1000Ω	470KΩ
V 7	6AQ5	470KΩ	330Ω	0Ω	.2Ω	*180Ω	*1000Ω	470KΩ
V 8	6X4	430Ω	Inf.	0Ω	.2Ω	Inf.	400Ω	120KΩ

*Measured From Pin 7 Of V8.

tage measurements are at 20,000 ohms per volt; AC
es measured at 1000 ohms per volt.
connections are shown as bottom views.
ed values are from socket pin to common negative.
y voltage maintained at 6 volts for voltage readings.
l tolerance on component values makes possible a
ion of ± 15% in voltage and resistance readings.
control at maximum, no signal applied for voltage
ements.

RADIO CRAFTSMAN
MODEL RC-8



RADIO CRAFTSMAN
MODEL RC-8

RADIO CRAFTSMAN MODEL RC-8

TRADE NAME	Radio Craftsman, Model RC-8		
MANUFACTURER	The Radio Craftsman Inc., 1341 S. Michigan Ave., Chicago 5, Illinois		
TYPE SET	AC Operated AM-FM Tuner with Self Contained Power Supply.		
TUBES(TEN)	Types 6BA6 RF Amp., 6BE6 Mixer, 6J6 Osc.-FM AFC, 6BA6 1st IF Amp., 6BA6 FM 2nd IF-AM DET., 6AU6 1st Limiter, 6AU6 2nd Limiter, 6AL5 Discriminator, 6C4 AF Amp., 5Y3GT Rectifier.		
POWER SUPPLY	105-125 Volts AC	RATING:	.80 Amp. @ 117 Volts AC
TUNING RANGE-BROADCAST	535-1620KC	FREQ. MOD.	88-108MC

HOWARD W. SAMS & CO., INC. • Indianapolis Indiana

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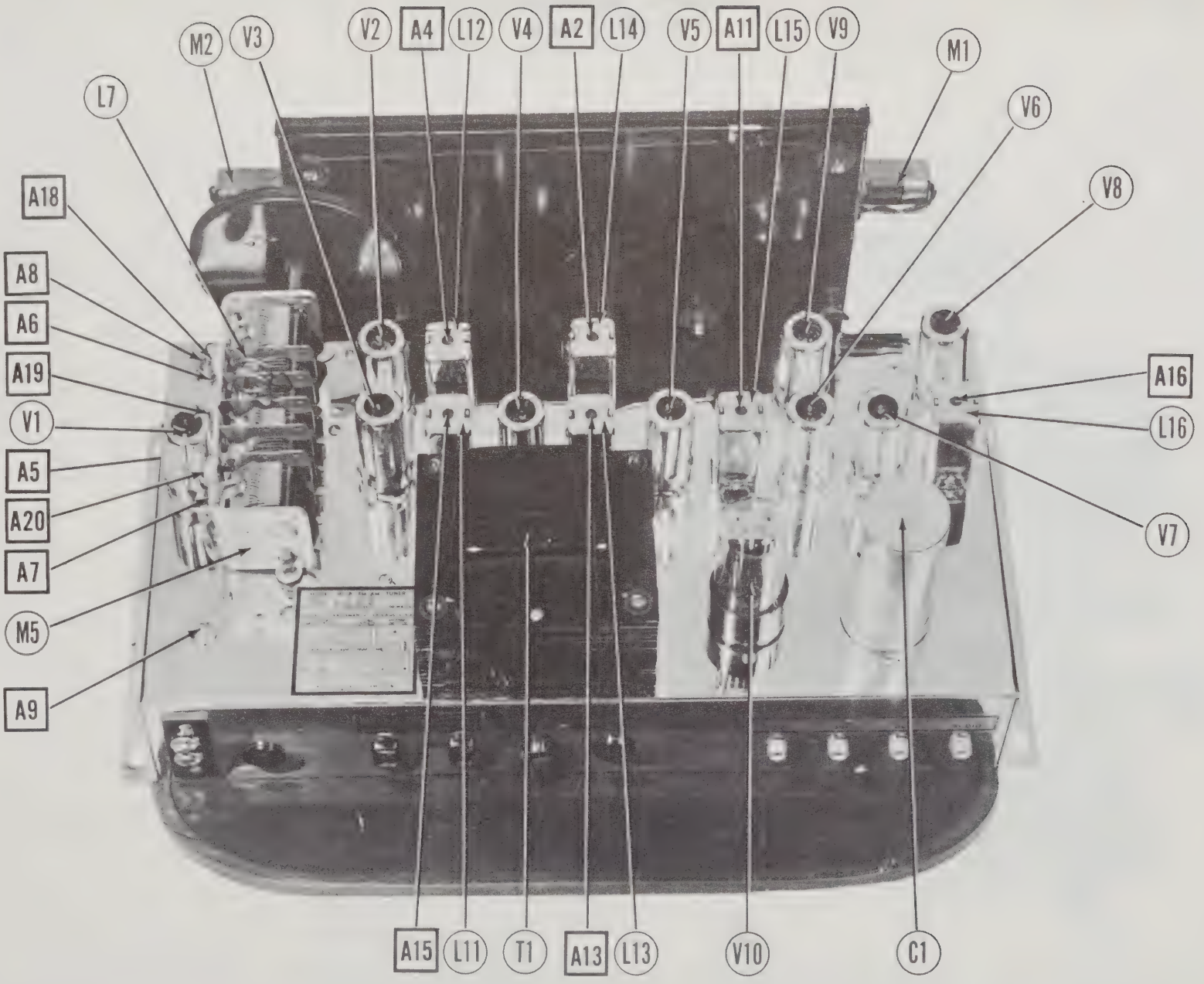
DATE 7/49 4914-13 SET #66 FOLDER #13


M2
V3
V2
A4
L12
V4
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A18
V8
A8
A6
A19
A16
V1
L16
A5
A20
V7
A7
M5
A9
A15
L11
T1
A13
L13
V10
C1

C9
R12
C3
R6
C19
C20
A14
C10
L10
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C11
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R19
C42
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C40
R46
R2
R31
A10
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C34
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L6
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L9
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A1
A3
A10
A12
A14
A17
A
B
C

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: RADIO CRAFTSMAN PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1	RF Amp.	6BA6	6BA6	7BK	
V2	Mixer	6BE6	6BE6	7CH	
V3	Osc.-FM AFC	6J6	6J6	7BF	
V4	1st IF Amp.	6BA6	6BA6	7BK	
V5	FM 2nd IF-AM Det.	6BA6	6BA6	7BK	
V6	1st Limiter	6AU6	6AU6	7BK	
V7	2nd Limiter	6AU6	6AU6	7BK	
V8	Discriminator	6AL5	6AL5	6BT	
V9	AF Amp.	6C4	6C4	6BG	
V10	Rectifier	5Y3GT	5Y3GT	5T	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: RADIO CRAFTSMAN PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	400	18S003	AF88J	UP4445		DY-406§	EL-240	◓Filter
B	40	400		PRS350/24	BR2045			UT-203	■Filter
C	20	300							▲Filter
C2	10	350	18X005	PRS350/12	BR1235		M-10-350	UT-123	Decoupling
C3	.05	400	18X206	P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C4	45		18X604	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Cath. Bypass
C5	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Screen Bypass
C6	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Plate Decoupling
C7	15		18X602		5W5Q2	GP1K-15	MOS.5-42	MS-415	RF Coupling
C8	15		18X602		5W5Q2	GP1K-15	MOS.5-42	MS-415	RF Coupling
C9	45		18X604	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Coupling
C10	45		18X604	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap
C11	45		18X604	1469-00005	5R5Q5	GP1K-50	MOS.5-45	MS-45	Fixed Trimmer
C12	600		18X606	1468-0005	1W5T6	GP2K-500	MO.5-36	1FM-35	Osc. Feedback
C13	45		18X603	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	AFC Coupling
C14	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Osc. Cath Bypass
C15	100		18X605	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AFC Filter
C16	.05	400	18X206	P488-05	GT4S5		ST-4-05	TM-15	AFC Filter
C17	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C18	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	React. Mod. Bypass
C19	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Mixer Screen Bypass
C20	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Mixer Plate Decoupling
C21	.02	400	18X202	P488-02	GT4S2		ST-4-02	TM-12	AVC Filter
C22	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Filament Bypass
C23	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Screen Bypass
C24	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st IF Plate Decoupling
C25A	150		Note 2	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
B	150		Note 2	1468-00015	5W5T15	GP2K-150	MO.5-315	1FM-315	Diode Filter
C26A	5000		18X610	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Cath. Bypass
B	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Screen Bypass
C	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd IF Plate Decoupling
C27	45		18X604	1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	3rd IF Grid Filter
C28	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd IF Screen Bypass
C29	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Decoupling
C30	22		18X603	1468-00002	5W5Q2	GP1K-25	MO.5-425	MS-42	IF Coupling
C31	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	4th IF Screen Bypass
C32	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	4th IF Plate Decoupling
C33	100		18X605	1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Bypass
C34	1500	500	18X607	1467-0015	1W5D15	GP2L-0015	MW.5-215	1FM-215	De-emphasis
C35	.05	400	18X206	P488-05	GT4S5		ST-4-05	TM-15	Audio Coupling
C36	5000		18X608	1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Audio Coupling
C37	.25	200	18X209	P488-25	GT2P25		ST-2-25	TC-2	Audio Coupling
C38	.01	400	18X201	P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tone Compensation
C39	.005	600	18X211	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Compensation
C40	.005	600	18X211	P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Tone Compensation
C41	.02	400	18X202	P488-02	GT4S2		ST-4-02	TM-12	Tone Compensation
C42	.01	600	18X210	P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Line Filter

§Omit Bypass Section.
Note 1. Some Models Use 470MMF In This Application.
Note 2. Items C25A, C25B, and R27 Are Combined Into One Unit Obtainable Under Mfgr s Part No. 18X609.
Note 3. Some Models Use 22MMF In This Application.
Note 4. Some Models Use 1000MMF In This Application.

PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: RADIO CRAFTSMAN PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117VAC @ .80A	680VAC CT @ .110ADC	5VAC @ 2A	6.4VAC @ 3.0A	19S201	P-4080*	PV-120A*	P-3153*

*Drill New Mounting Holes.

R F COILS

ITEM No.	USE	DC RES.: PRI.	DC RES.: SEC.	REPLACEMENT DATA: RADIO CRAFTSMAN PART No.	REPLACEMENT DATA: MEISSNER PART No.	
L1	Loop Ant.	.5Ω		5B603		
L2	AM Ant.Coil	38Ω	4.5Ω	5A212		
L3	FM Dipole Ant.			7X401		
L4	FM Ant.Coil	0Ω		5A210		
L5	RF Plate Choke	.1Ω		5S402		
L6	AM RF Coil	140Ω	5Ω	5B214		
L7	FM RF Coil	0Ω		5A209		
L8	RF Plate Choke			5S402		
L9	FM Osc.Coil	0Ω	0Ω	5A208		
L10	AM Osc.Coil	2Ω	9Ω	5A211	14-1060†	†Add 50MMF Cap From High Side Of Tuning Cap To Osc. Grid Circuit.
L11	FM 1st IF	.5Ω	.5Ω	5X004		
L12	AM 1st IF	15Ω	15Ω	5X003		
L13	FM 2nd IF	.5Ω	.5Ω	5X004		
L14	AM 2nd IF	15Ω	15Ω	5X003		
L15	FM 3rd IF	.5Ω	.5Ω	5X004		
L16	FM Disc.XFMR	.8Ω	1Ω	5X005		

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA: RADIO CRAFTSMAN PART No.	REPLACEMENT DATA	NOTES
M1	Bayonet	6-8V	0.15A	Blue	15X003		Type #44
M2	Bayonet	6-8V	0.15A	Blue	15X003		Type #44

MISCELLANEOUS

ITEM No.	PART NAME	RADIO CRAFTSMAN PART No.	NOTES
M3	Switch	4S003	AM-FM-PH-TV
M4	Switch	4B002	AM-FM
M5	Tuning Gang	17B005	

PARTS LIST AND DESCRIPTIONS (Continued)

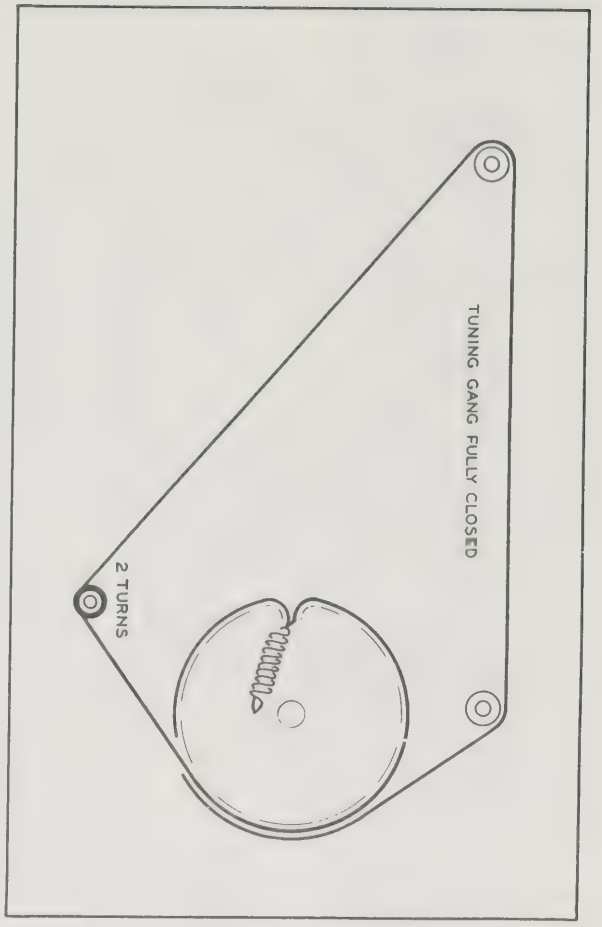
CONTROLS

ITEM No.	RATING		REPLACEMENT DATA			INSTALLATION NOTES
	RESISTANCE	WATTS	RADIO CRAFTSMAN PART No.	IRC PART No.	CLAROSTAT PART No.	
R1A	500K		23S704			Volume control and SW } Dual
P	500K					Volume control and SW }
R2A	500K		23S703	Q11-133	AK-58-S	Bass control
P	Shaft		Not Req.	Not Req.	KSS-3	Attach to R2A per instructions
R3A	1 Meg		23S702	Q11-116	AK-27-S	Treble control
P	Shaft		Not Req.	Not Req.	KSS-3	Attach to R3A per instructions

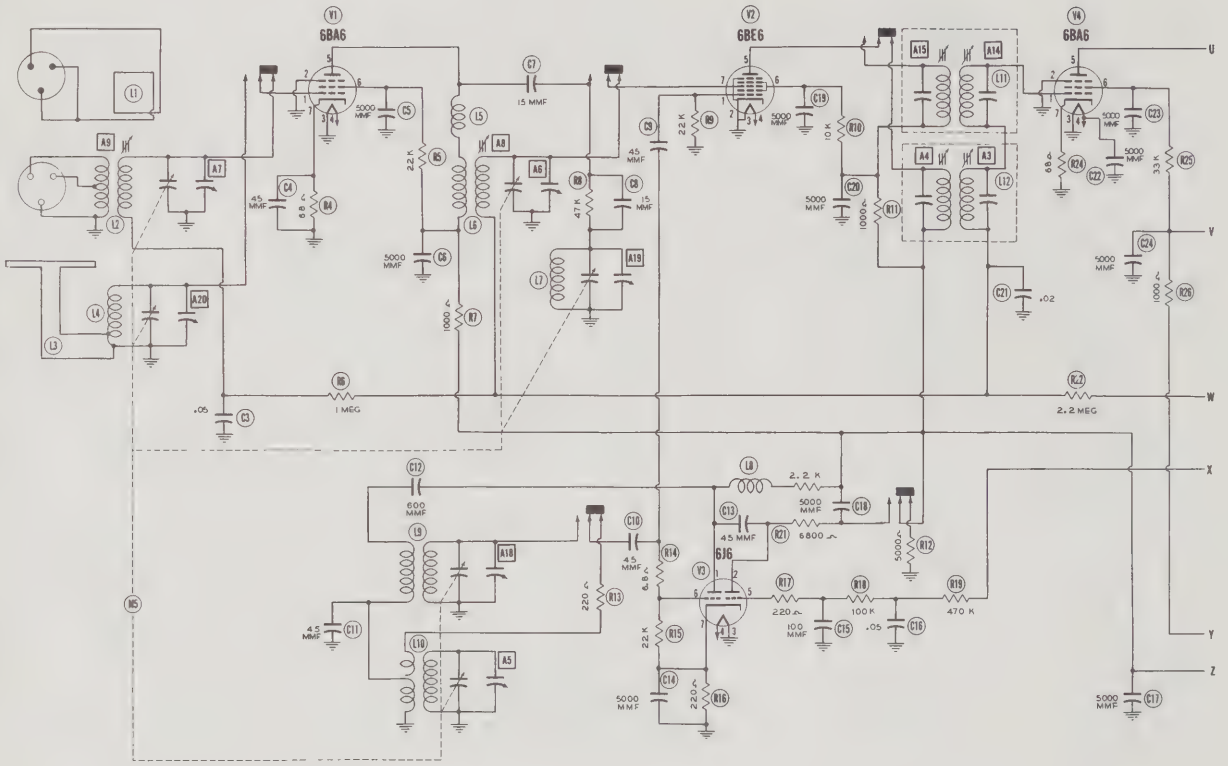
RESISTORS

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES
	RESISTANCE	WATTS	RADIO CRAFTSMAN PART No.	IRC PART No.	
R4	68Ω	1	23X016		RF Cathode
R5	33KΩ	1	23X021	BTS-22K	RF Screen Decoupling
R6	1 Meg	1	23X026	BTS-1 Meg	AVC Network
R7	1000Ω	1	23X019	BTS-1000	RF Plate Decoupling
R8	47KΩ	1	23X022	BTS-47K	Mixer Grid
R9	33KΩ	1	23X021	BTS-22K	Mixer Grid
R10	10KΩ	1	23X203	BTA-10K	Mixer Screen Dropping
R11	1000Ω	1	23X019	BTS-1000	Mixer Decoupling
R12	5000Ω	10	23X606	AB-5000	Bleeder
R13	820Ω	1	23X017		Parasitic Suppressor
R14	6.8Ω	1	23X032		Parasitic Suppressor
R15	22KΩ	1	23X021	BTS-22K	Osc. Grid
R16	2.2Ω	1	23X017		Osc. Cathode
R17	820Ω	1	23X017		AFC Filter
R18	100KΩ	1	23X023	BTS-100K	AFC Filter
R19	470KΩ	1	23X025	BTS-470K	AFC Filter
R20	47KΩ	1	23X022	BTS-47K	De-emphasis
R21	6800Ω	1	23X301	BTA-6800	AFC Plate
R22	2.2 Meg	1	23X027	BTS-2.2 Meg	AVC Network
R23	470KΩ	1	23X025	BTS-470K	Isolation See Note 1
R24	68Ω	1	23X016		1st IF Cathode
R25	33KΩ	1	23X206	BTA-33K	1st IF Screen Decoupling
R26	1000Ω	1	23X019	BTS-1000	1st IF Decoupling
R27	47KΩ	1	See Note 2	BTS-47K	Diode Filter
R28	470KΩ	1	23X025	BTS-470K	Diode Load
R29	68Ω	1	23X016		2nd IF Cathode
R30	33KΩ	1	23X206	BTA-33K	2nd IF Screen Decoupling
R31	1000Ω	1	23X019	BTS-1000	2nd IF Decoupling
R32	100KΩ	1	23X023	BTS-100K	1st Limiter Grid
R33	2.2 Meg	1	23X027	BTS-2.2 Meg	AVC Network
R34	22KΩ	1	23X021	BTS-22K	1st Limiter Screen Bleeder
R35	10KΩ	1	23X010	BTA-10K	1st Limiter Plate
R36	22KΩ	2	23X401	BT-2-22K	1st Limiter Decoupling
R37	150KΩ	1	23X024	BTS-150K	2nd Limiter Grid
R38	22KΩ	1	23X021	BTS-22K	2nd Limiter Screen Bleeder
R39	22KΩ	2	23X401	BT-2-22K	2nd Limiter Screen Decoupling
R40	1000Ω	2	23X019	BTS-1000	2nd Limiter Plate Decoupling
R41	100KΩ	2	23X028	BTS-100K	Disc. Diode Load
R42	100KΩ	2	23X028	BTS-100K	Disc. Diode Load
R43	12 Meg	1		BTS-10 Meg	AF Grid
R44	47KΩ	1	23X022	BTS-47K	AF Plate
R45	47KΩ	1	23X022	BTS-47K	Tone Compensation
R46	22KΩ	1	23X021	BTS-22K	Tone Compensation
R47	47KΩ	1	23X022	BTS-47K	Tone Compensation
R48	47KΩ	1	23X022	BTS-47K	Filter
R49	1000Ω	5	23X602	AB-1000	Filter
R50	700Ω	10	23X603	AB-700	Filter

Note 1. Not Used In All Models.
Note 2. Items C25A, C25B, and R27 Are Combined Into One Unit, And Are Obtainable Under Mfgr s Part No. 18X609.



DATE 7/49 4914-13 SET #66 FOLDER #13



VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6BA6	-.1VDC	0V	0V	6.5VAC	165VDC	100VDC	.8VDC	
V2	6BE6	-3VDC	0V	0V	6.5VAC	180VDC	100VDC	-.4VDC	
‡V3A	6J6	180VDC	180VDC	0V	6.5VAC	-.1VDC	§-.3VDC	4VDC	
V3B	6J6	155VDC	0V	0V	6.5VAC	0V	§-7VDC	2.2VDC	
V4	6BA6	-.4VDC	0V	0V	6.5VAC	240VDC	120VDC	.9VDC	
‡V5A	6BA6	0V	0V	0V	6.5VAC	245VDC	105VDC	1VDC	
V5B	6BA6	-.8VDC	0V	0V	6.5VAC	-.8VDC	-.8VDC	0V	
‡V6	6AU6	-1VDC	0V	0V	6.5VAC	40VDC	70VDC	0V	
‡V7	6AU6	-.6VDC	0V	0V	6.5VAC	250VDC	95VDC	0V	
‡V8	6AL5	0V	-14VDC	6.5VAC	0V	.2VDC	0V	-.6VDC	
V9	6C4	36VDC	0V	0V	6.5VAC	36VDC	-.9VDC	0V	
V10	5Y3GT	0V	320VDC	0V	315VAC	0V	315VAC	0V	320VDC

§TAKEN WITH VACUUM TUBE VOLTMETER
‡ VOLTAGE AND RESISTANCE READINGS TAKEN IN FM POSITION.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V1	6BA6	3.[illegible] Meg.	0Ω	0Ω	.2Ω	*2.7KΩ	*22KΩ	75Ω	
V2	6BE6	22KΩ	0Ω	0Ω	.2Ω	*170Ω	*12KΩ	2.2 Meg.	
‡V3A	6J6	*[illegible]KΩ	*6KΩ	0Ω	.2Ω	800KΩ	22KΩ	220Ω	
V3B	6J6	[illegible]	*Inf.	0Ω	.2Ω	800KΩ	22KΩ	220Ω	
V4	6BA6	2.[illegible] Meg.	0Ω	0Ω	.2Ω	*170Ω	*33KΩ	68Ω	
‡V5A	6BA6	400KΩ	0Ω	0Ω	.2Ω	*170Ω	*33KΩ	68Ω	
V5B	6BA6	400KΩ	0Ω	0Ω	.2Ω	*Inf.	*Inf.	68Ω	
‡V6	6AU6	90KΩ	0Ω	0Ω	.2Ω	*27KΩ	*17KΩ	0Ω	
‡V7	6AU6	150KΩ	0Ω	0Ω	.2Ω	170Ω	20KΩ	0Ω	
‡V8	6AL5	0Ω	100KΩ	.2Ω	0Ω	200KΩ	0Ω	100KΩ	
V9	6C4	*100KΩ	Inf.	0Ω	.2Ω	*100KΩ	10 Meg.	0Ω	
V10	5Y3GT	Inf.	7KΩ	Inf.	50Ω	Inf.	48Ω	Inf.	5KΩ

*Measured From Pin 8 Of V10.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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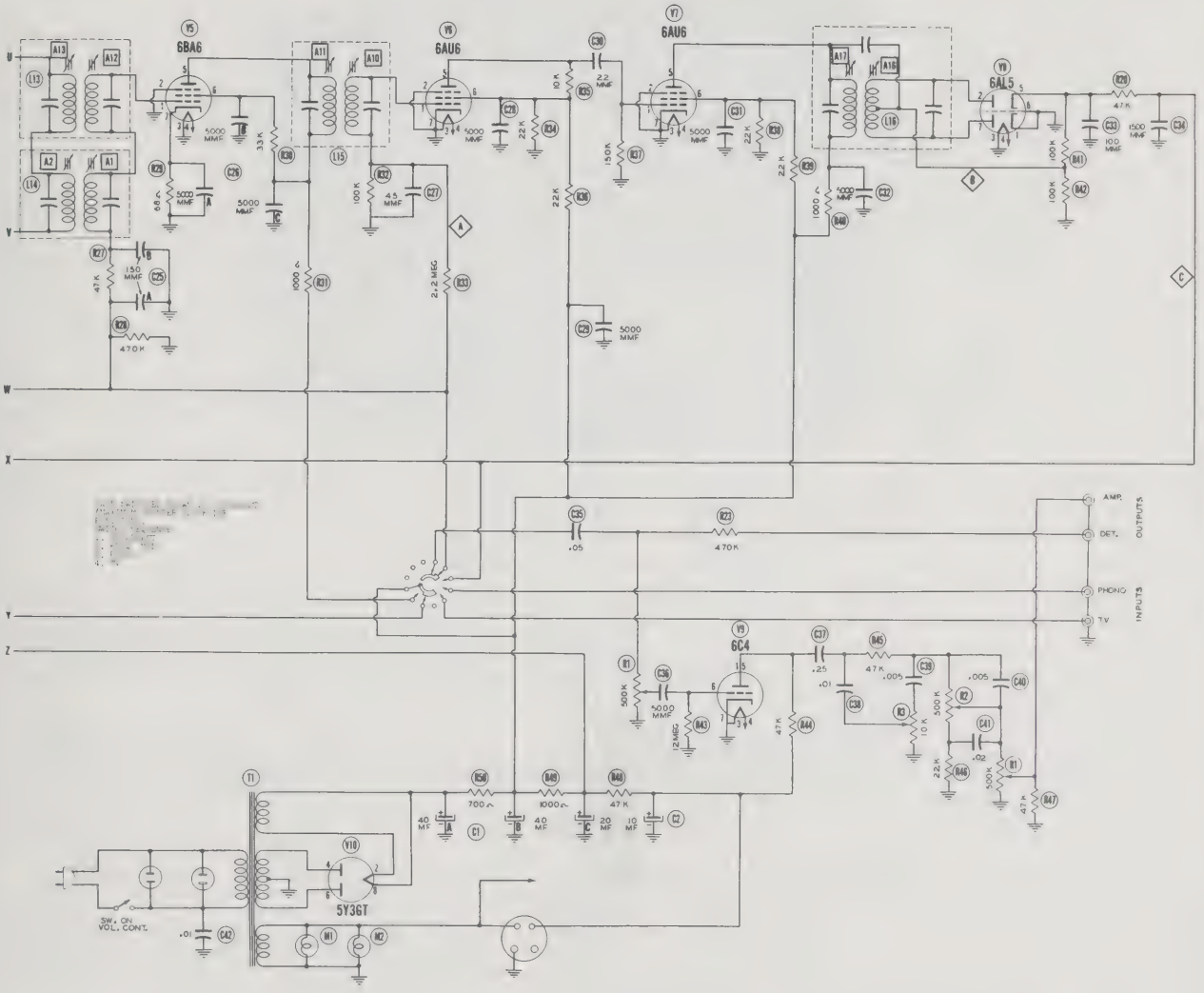

IF=455 KC AM

IF=10.7 MC FM

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ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

AM ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.01MFD	High side to pin 7 (Grid) 6BE6 (V2). Low side to chassis.	455KC	AM (fully counter clock-wise)	Point of non-inter-ference.	Across voice coil	A1,A2, A3,A4	Adjust for maximum out-put.
2.	220MMF	High side to pin 2 of Loop socket. Low side to chassis.	1500KC	"	1500KC	"	A5,A6 A7	"
3.	220MMF	"	600KC	"	Tune for maximum response	"	A8,A9	Adjust for maximum out-put. Repeat steps 2 & 3.

FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	CONNECT VTVM	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) 6BE6 (V2). Low side to chassis.	10.7MC (No Mod.)	FM (1st Pos. CW from fully CCW)	Point of non-inter-ference	DC Probe to Point ◇A◇ Common to chas-sis.	A10, A11, A12, A13, A14, A15	Adjust for maximum de-flection.
5.	.01MFD	"	"	"	"	DC Probe to Point ◇B◇ Common to chas-sis.	A16	"
6.	.01MFD	"	"	"	"	DC Probe to Point ◇C◇ Common to chas-sis.	A17	Adjust for zero reading. A positive and negative reading is obtained on either side of the cor-rect setting.

FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
4.	.01MFD	High side to pin 7 (Grid) 6BE6 (V2). Low side to chassis.	10.7MC (450KC Sweep)	FM	Point of non-inter-ference	Vert.Amp. to Point ◇A◇ Low side to chassis.	A10, A11, A12, A13, A14, A15	Adjust for maximum ampli-tude and symmetry as per Fig 1.
5.	.01MFD	"	"	"	"	Vert.Amp. to Point ◇C◇ Low side to chassis.	A16, A17	Adjust A16 for maximum amplitude and straight-ness of cross-over lines as per Fig 2. Adjust A17 so cross-over occurs at center of pattern. Con-tinue with step 7.

FM RF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
7.	300Ω carbon res.	Across FM ant-enna terminals.	104MC (No Mod.)	FM	104MC	DC Probe to Point ◇A◇ Common to chas-sis.	A18, A19, A20	Adjust for maximum de-flection.

FIG. 1

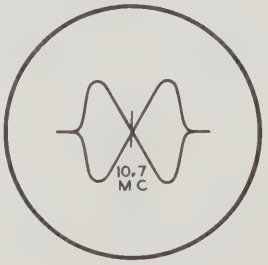
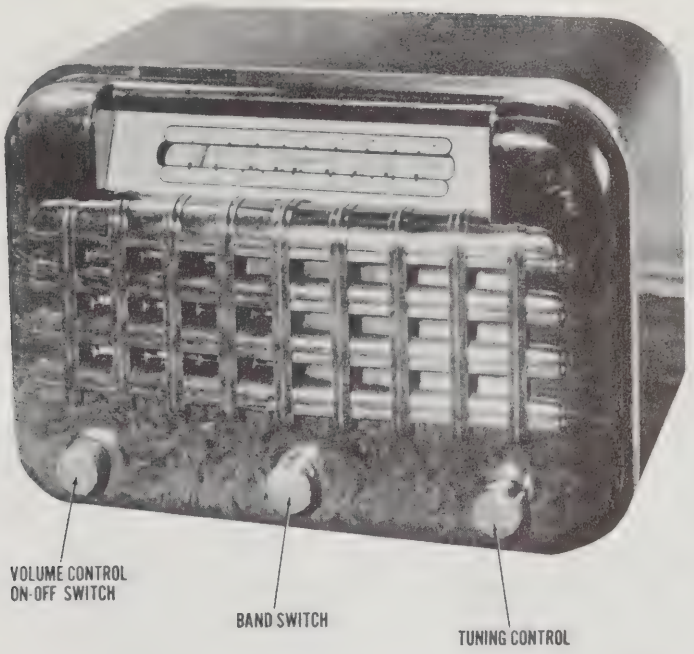


FIG. 2



REGAL MODEL 7163

TRADE NAME	Regal, Model 7163
MANUFACTURER	Regal Electronics Corp., 605 W. 130th St., New York, N.Y.
TYPE SET	AC-DC Operated 3 Band Superheterodyne Receiver with Loop Antenna.
TUBES (SIX)	Types 12SK7GT RF Amp., 12SA7GT Converter, 12SK7GT IF Amp., 12SQ7 DET-AVC-AF, 35L6GT Power Output, 35Z5GT Rectifier.
POWER SUPPLY	110-120 Volts AC-DC — RATING .26 Amp. @ 117 Volts AC
TUNING RANGE—BROADCAST	540-1650KC — **SHORT WAVE** #1 2.5-7.5MC #2 7.25-22.3MC

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

To set dial pointer turn tuning gang fully closed and set pointer 1-3/4" from the left hand end of the dial backplate.

Use isolation transformer if available. If not, connect a .1 MFD cap. in series with low side of signal generator and chassis.

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
1.	.1MFD	High side to front section of tuning gang. Low side to chassis.	455KC	BC	Tuning gang fully open.	Across voice coil.	A1, A2 A3, A4	Adjust for maximum output. If isolation transformer is not used reduce dummy antenna to .001 MFD to reduce hum modulation.
2.	.1MFD	"	455KC	BC	600KC	"	A5	Adjust for minimum output.
3.	200MMFD	High side to antenna lead. Low side to chassis.	1650KC	BC	Tuning gang fully open.	"	A6	Adjust for maximum output.
4.	200MMFD	"	1500KC	BC	Tune for max. signal.	"	A7	"
5.	200MMFD	"	600KC	BC	600KC	"	A8	Rock tuning gang and adjust for maximum output. Repeat steps 3 and 4.
6.	400Ω	"	7.5MC	SW#1	Tuning gang fully open.	"	A9	Adjust for maximum output.
7.	400Ω	"	7.0MC	SW#1	Tune for max. signal.	"	A10	Rock tuning gang and adjust for maximum output.
8.	400Ω	"	22.3MC	SW#2	Tuning gang fully open.	"	A11	Adjust for maximum output.
9.	400Ω	"	20MC	SW#2	Tune for max. signal.	"	A12	Rock tuning gang and adjust for maximum output.

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PARTS LIST AND DESCRIPTIONS

REGAL MODEL 7163

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: REGAL PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	INSTALLATION NOTES
V1A	RF Amp.	12SG7	12SG7	8BK	
B	RF Amp.	12SH7	12SH7	8BK	
C	RF Amp.	12SK7GT	12SK7GT	8N	
V2	Converter	12SA7GT	12SA7GT	8AD	
V3	IF Amp.	12SK7GT	12SK7GT	8N	
V4	DET-AVC-AF Amp.	12SQ7	12SQ7	8Q	
V5	Power Output	35L6GT	35L6GT	7AC	
V6	Rectifier	35Z5GT	35Z5GT	6AD	

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: REGAL PART No.	AEROVOX PART No.	CORNELL-DUBILIER PART No.	ERIE PART No.	SOLAR PART No.	SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	50	150		PRSA150/50	EDL5515		DSB-2x50	TA-505	Filter Red
B	50	150		-50			-150		Filter Red
C2	.05	200		P288-05	GT2S5		ST-4-05	TM-15	Ext. Ant. Coupling
C3	.05	400		P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C4	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	RF Coupling
C5	.002	400		P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Tuning Cap Isolation
C6	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Tuning Cap Isolation
C7	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Osc. Anode Bypass
C8	.05	400		P488-05	GT4S5		ST-4-05	TM-15	AVC Filter
C9	.05	400		P488-05	GT4S5		ST-4-05	TM-15	RF Bypass
C10	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Diode Filter
C11	250	500		1468-00025	5W5T25	GP2K-250	MO.5-325	1FM-325	Diode Filter
C12	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C13	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass
C14	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling
C15	.01	600		P688-01	GT6S1		ST-6-01	TM-11	Output Plate Bypass
C16	.02	600		P688-02	GT6S2		ST-6-02	TM-12	Line Filter

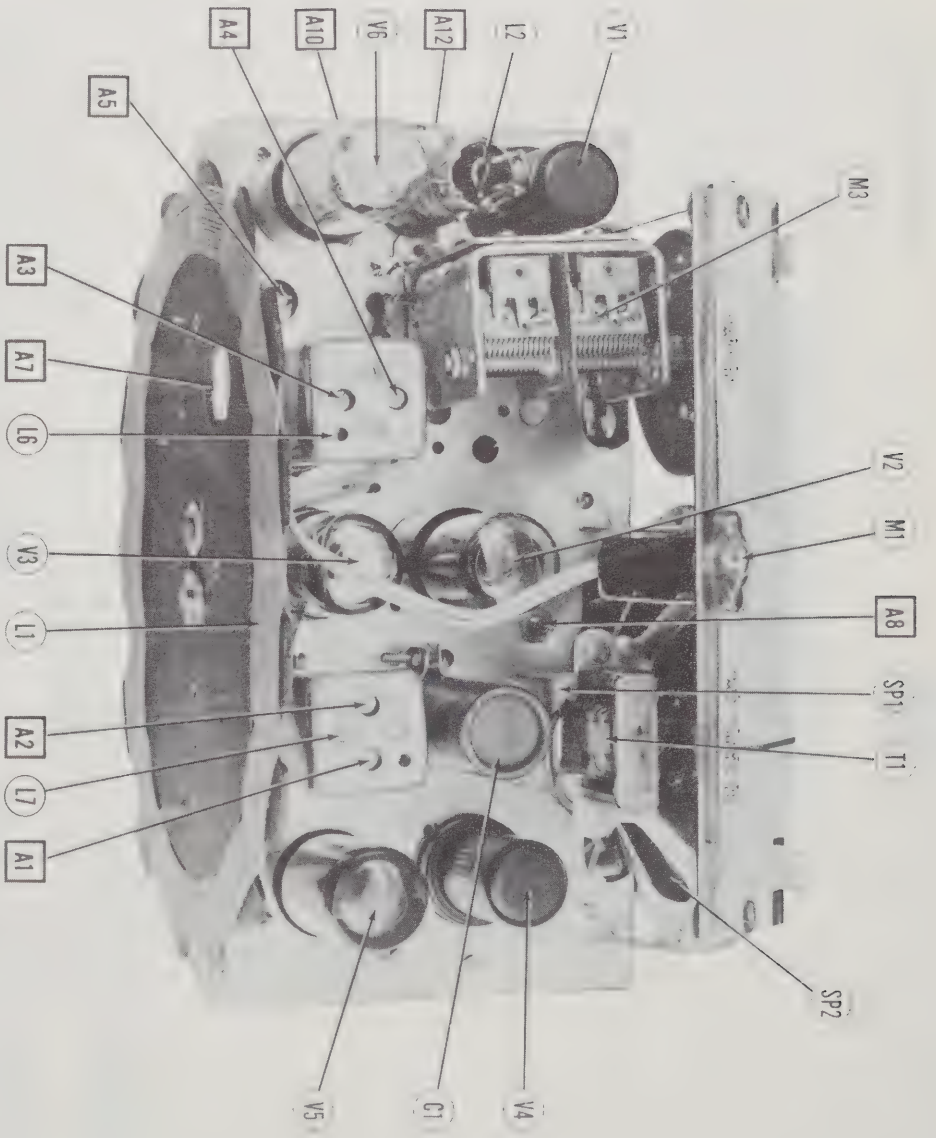
CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	IRC PART No.	CLAROSTAT PART No.	INSTALLATION NOTES
R1A	500KΩ	½	20-101	Q13-133	AM-60-Z	Volume control
B	Shaft			Not Req.	KSS-3	Attach to R1A per instructions
C	Switch			76-1	SW-A	Attach to R1A per instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: REGAL PART No.	IRC PART No.	IDENTIFICATION CODES
R2	100KΩ	½		BTS-100K	AVC Network
R3	10KΩ	½		BTS-10K	RF Choke Shunt
R4	4700Ω	½		BTS-4700	RF Plate
R5	100KΩ	½		BTS-100K	Conv. Grid
R6	1000Ω	½		BTS-1000	Conv. Screen Decoupling
R7	100Ω	½			Parasitic Suppressor
R8	22KΩ	½		BTS-22K	Osc. Grid
R9	47KΩ	½		BTS-47K	Diode Filter
R10	2.2 Meg	½		BTS-2.2 Meg	AVC Network
R11	7.5 Meg	½		BTS-6.8 Meg	AF Grid
R12	250KΩ	½		BTS-220K	AF Plate
R13	500KΩ	½		BTS-470K	Output Grid
R14	150Ω	½		BW-½-150	Output Cathode
R15	1000	2		BW-2-1000	Filter
R16	22Ω	½			Rect. Ballast

CHASSIS—TOP VIEW



PARTS LIST AND DESCRIPTIONS (Continued)

TRANSFORMER (OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		REGAL PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T1	2100Ω	3.1Ω	139Ω	.5Ω	60-101	A-3332	RO-21†	A-3025	†Drill New Mtg. Holes.

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
			REGAL PART No.	JENSEN PART No.	QUAM PART No.	
	FIELD	V.C. IMP.		ST-10b*		
SP1	PM	3.1Ω	110-101	MOD.P5-X	5A07*	*Remount output transformer
	CONE DIA.	V.C. DIA.				
SP2	4-3/4"	9/16"				

R F COILS

ITEM No.	USE	DC RES.		REPLACEMENT DATA		
		PRI.	SEC.	REGAL PART No.	MEISSNER PART No.	
L1	Loop Ant.	.1Ω	1.2Ω	30-107		
L2	SW Ant.Coil	.2Ω	0Ω	30-124		
L3	RF Choke	1Ω		30-125		
L4	Osc. Coil	5Ω	.2Ω	30-123		
L5	Wave Trap	49Ω		30-106		
L6	Input IF	23Ω	23Ω	30-104	16-1658	
L7	Output IF	23Ω	23Ω	30-105	16-1660	

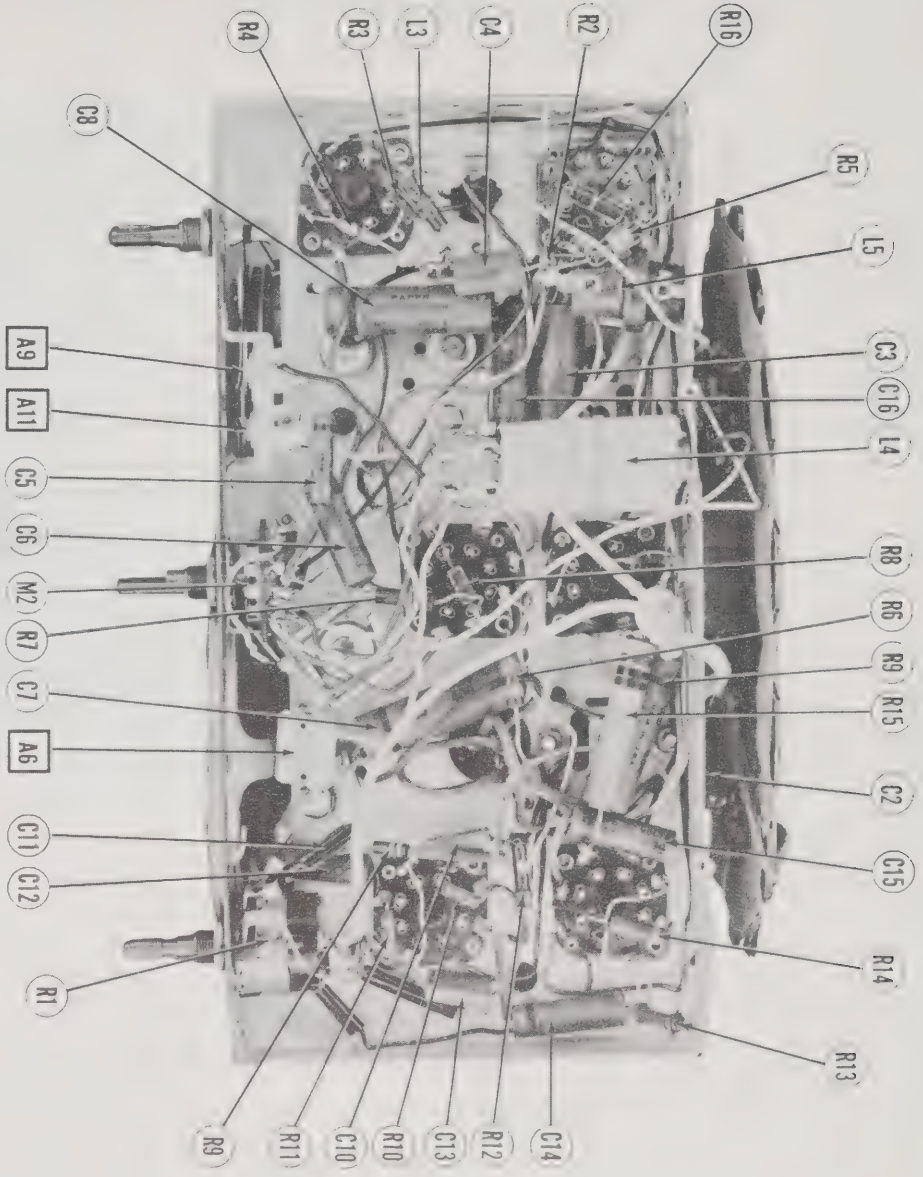
DIAL LIGHTS

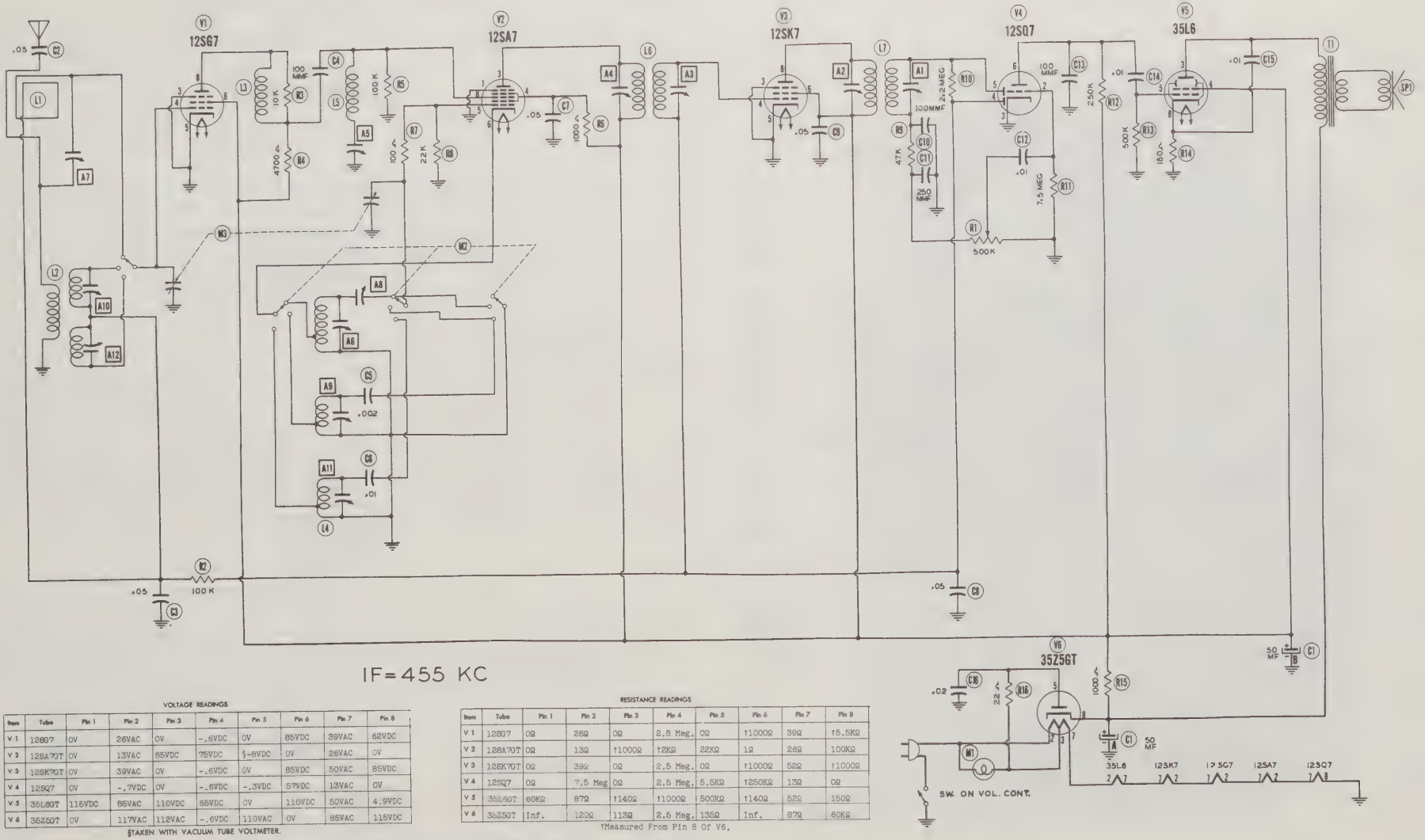
ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA		NOTES
					REGAL PART No.		
M1	Bayonet	6-8V	.15	Brown			Type #47

MISCELLANEOUS

ITEM No.	PART NAME	REGAL PART No.	NOTES
M2	Switch	95-108	Band
M3	2 Gang Var. Cap.	40-104	(20-472MMF) Each Section

CHASSIS—BOTTOM VIEW





IF=455 KC

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SG7	0V	26VAC	0V	-.6VDC	0V	85VDC	39VAC	62VDC
V 2	12SA7GT	0V	13VAC	85VDC	75VDC	§-8VDC	0V	26VAC	0V
V 3	12SK7GT	0V	39VAC	0V	-.6VDC	0V	85VDC	50VAC	85VDC
V 4	12SQ7	0V	-.7VDC	0V	-.6VDC	-.3VDC	57VDC	13VAC	0V
V 5	35L6GT	115VDC	85VAC	110VDC	85VDC	0V	110VDC	50VAC	4.9VDC
V 6	35Z5GT	0V	117VAC	112VAC	-.6VDC	110VAC	0V	85VAC	115VDC

§TAKEN WITH VACUUM TUBE VOLTMETER.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
V 1	12SG7	0Ω	26Ω	0Ω	2.8 Meg.	0Ω	†1000Ω	39Ω	†5.5KΩ
V 2	12SA7GT	0Ω	13Ω	†1000Ω	†2KΩ	22KΩ	1Ω	26Ω	100KΩ
V 3	12SK7GT	0Ω	39Ω	0Ω	2.5 Meg.	0Ω	†1000Ω	52Ω	†1000Ω
V 4	12SQ7	0Ω	7.5 Meg	0Ω	2.5 Meg.	5.5KΩ	†250KΩ	13Ω	0Ω
V 5	35L6GT	60KΩ	87Ω	†140Ω	†1000Ω	500KΩ	†140Ω	52Ω	150Ω
V 6	35Z5GT	Inf.	120Ω	113Ω	2.6 Meg.	135Ω	Inf.	87Ω	60KΩ

†Measured From Pin 8 Of V6.

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

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4914-14

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

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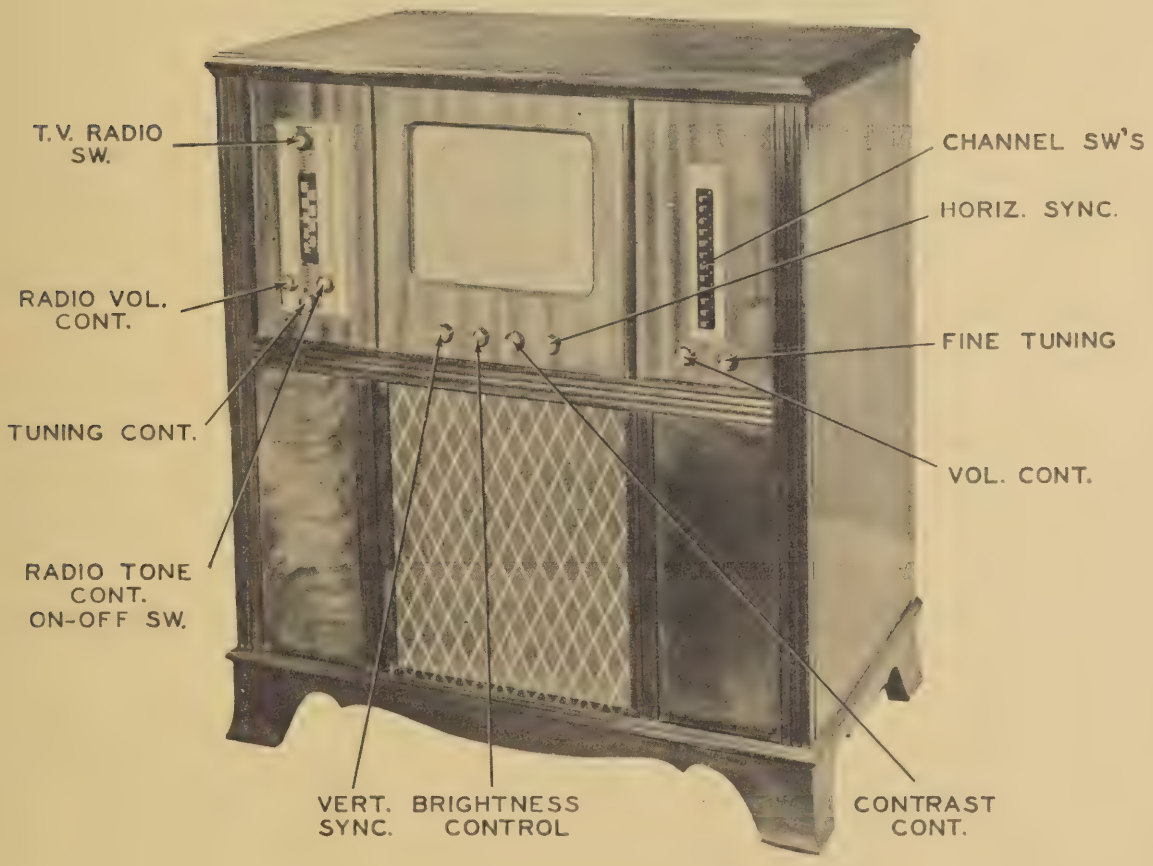

Model 8133

SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

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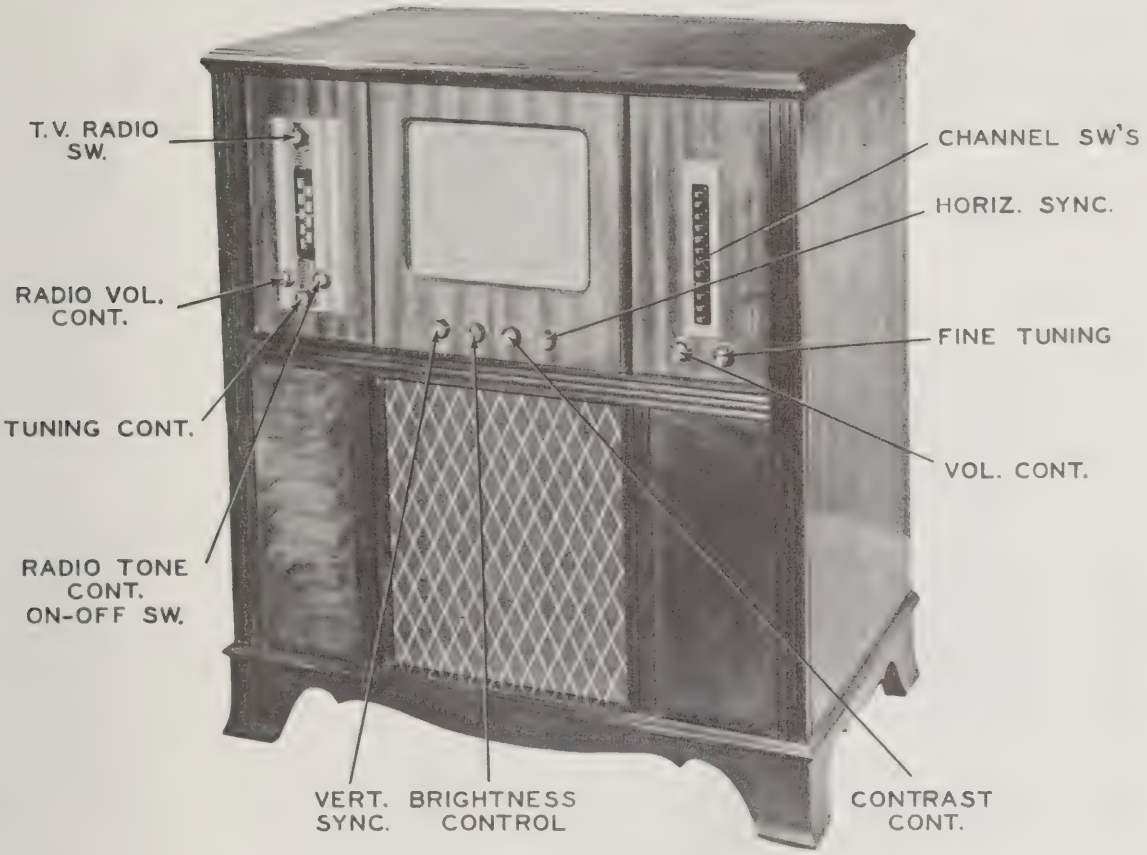
Date 7/49—No. 4914-15 Set No. 66—Folder No. 15

PHOTOFACT* Folder

*TRADE MARK

SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)



SILVERTONE MODEL 8133

TRADE NAME	Silvertone, Models 8132 (101.854), 8133 (101.846 & 101.829-1)
SUPPLIER	Sears, Roebuck and Co., 925 So. Homan Ave., Chicago, Illinois
TYPE SET	Television Receiver (Am & Phono on Model 8133 only)
TUBES	Thirty-Three (Model 8133). Thirty (Model 8132)

POWER SUPPLY 117 Volts, 60 cycles AC RATING: 2.5 Amps (TV) and .37 Amps. (AM) @ 117 Volts
TUNING RANGE—Channels 2 through 13, 540-1600KC

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SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

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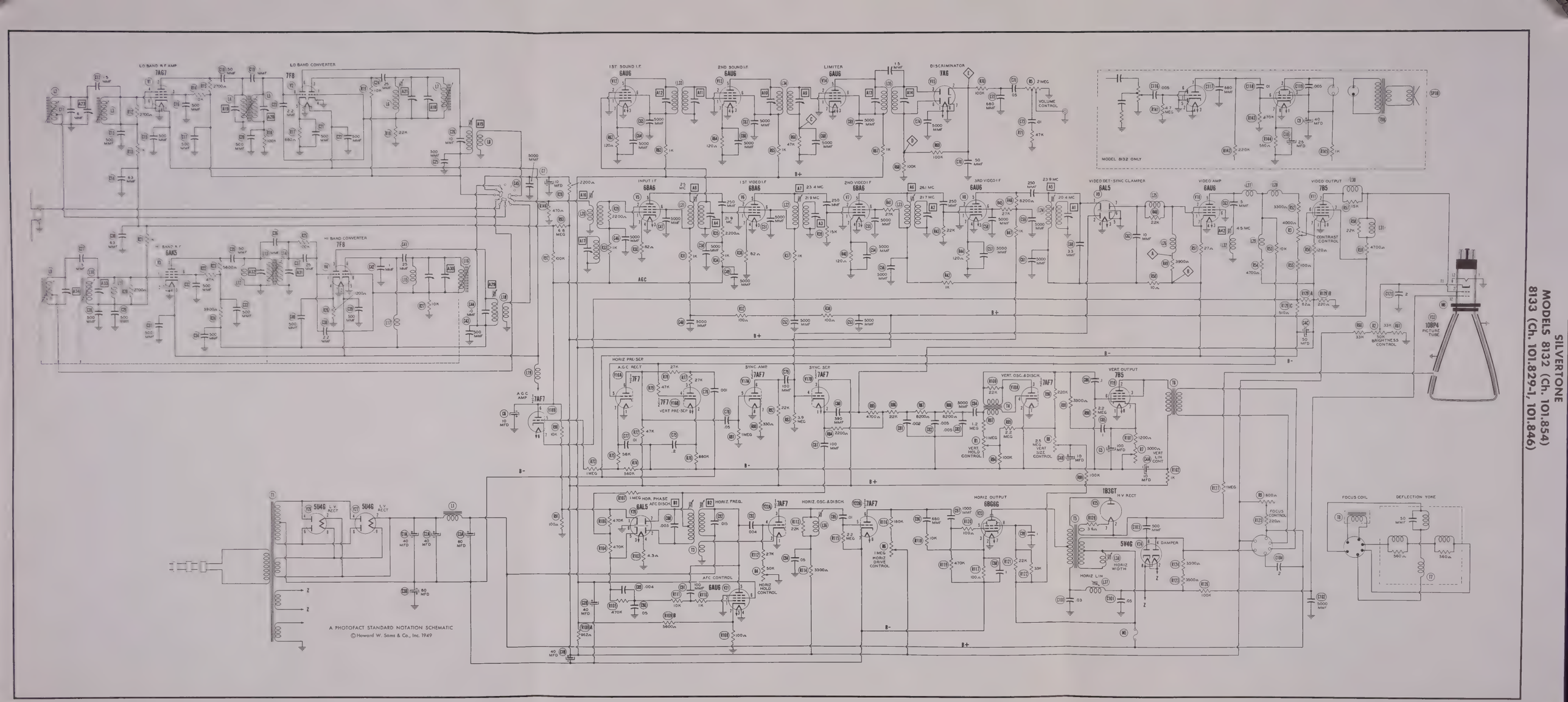
DATE 7/49 4914-15 SET #66 FOLDER #15



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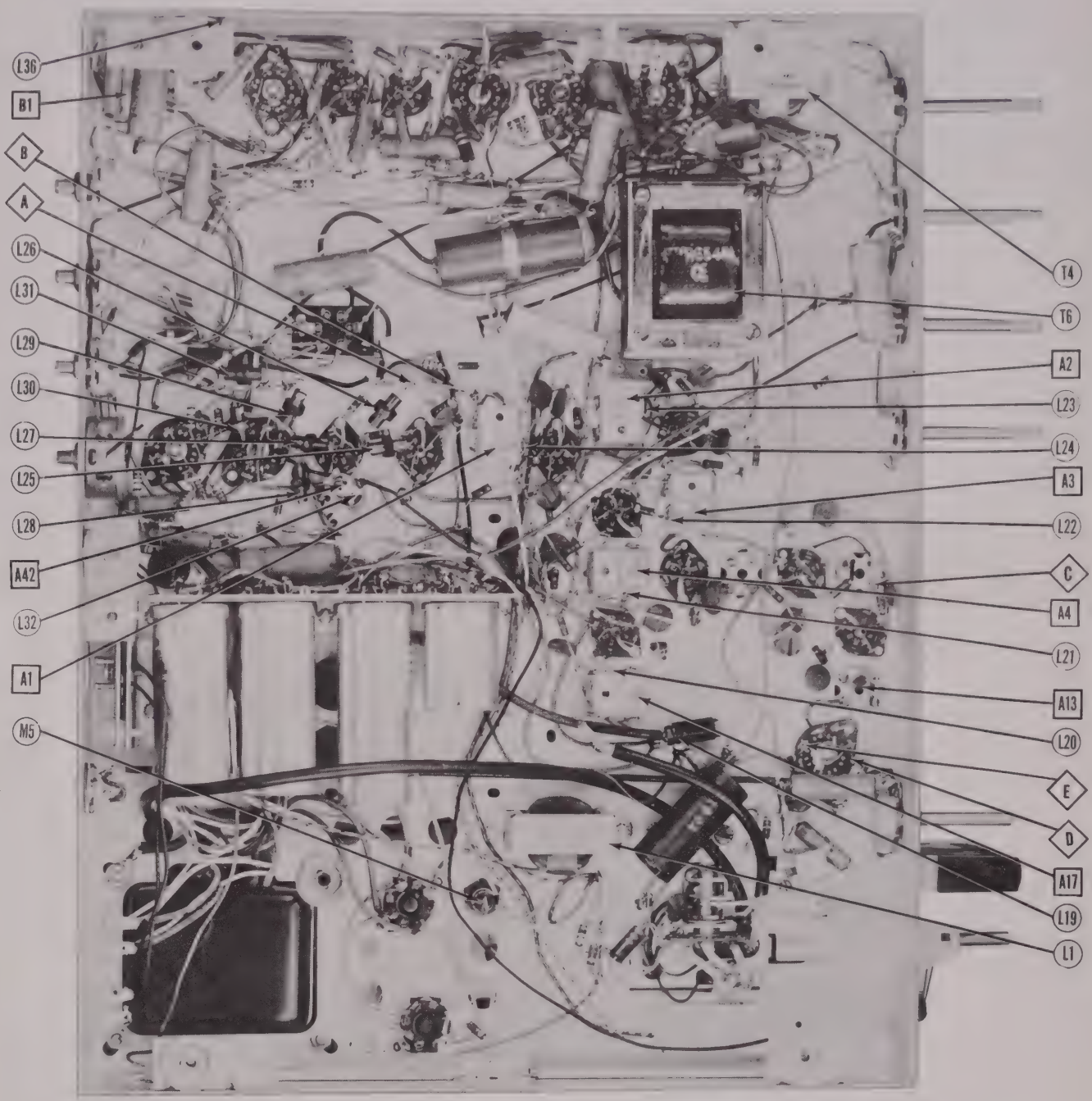
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

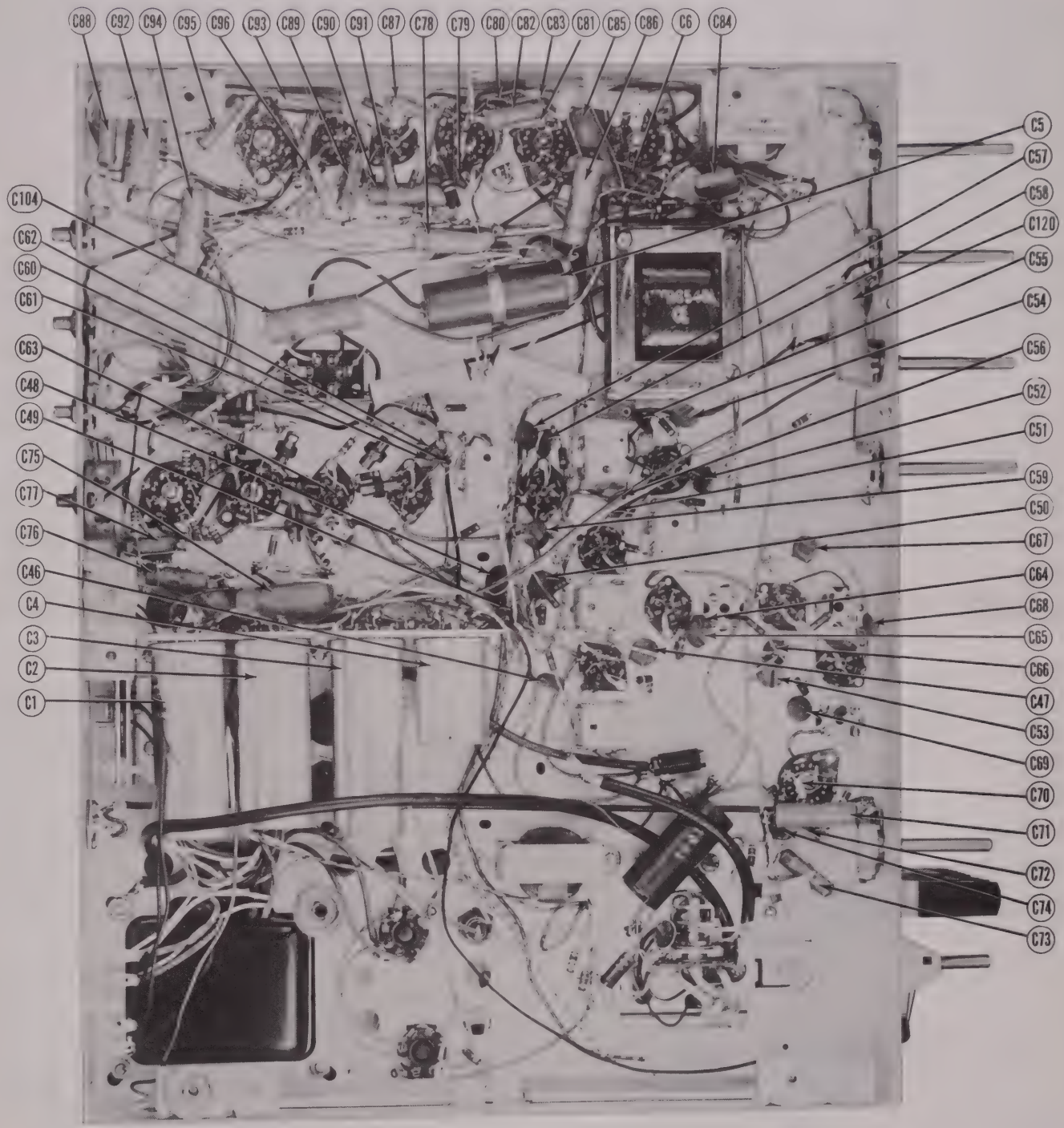
SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

CHASSIS TOP VIEW



CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

RADIO CHASSIS-TOP VIEW



CHASSIS BOTTOM VIEW–CAPACITOR IDENTIFICATION

CHASSIS TOP VIEW

ALIGNMENT INSTRUCTIONS

TV ALIGNMENT

PRE-ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The alignment of this receiver is an exacting procedure and should be undertaken only when necessary. Before deciding alignment must be done check the following at the customer's home:

1. Antenna installation
2. Reception on all channels.
3. Tubes
4. All operating controls and adjustments including pushbutton adjustment screws (See steps 27 and 32).

Check in the repair shop before aligning:

5. Measure all important voltages including AFC.
6. Substitute a known good picture tube.
7. If picture definition is still poor, observe overall IF response curve.

If none of the above checks indicate other trouble proceed with the alignment of the receiver.

VIDEO IF ALIGNMENT

Connect the negative lead of a 3 volt battery to pin 6 of the 7AF7 AGC Amp. tube (V18) and the positive lead to ground.

Use shielded leads on the VTVM and when connecting across R49, take precautions not to ground the -125 volt bias supply (Bottom end of R49).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V5). Low side to chassis.	20.4MC (Unmod.)	Any	DC Probe to Point (A) Common to Point (B)	A1	Adjust for minimum deflection.
2.	5000MMF	"	21.9MC	"	"	A2	" " " "
3.	5000MMF	"	"	"	"	A3	" " " "
4.	5000MMF	"	"	"	"	A4	" " " "
5.	5000MMF	"	23.9MC	"	"	A5	Adjust for maximum deflection. Attenuate signal generator to give less than 3 volt reading. Two peaks may be obtained use peak that occurs when slug is farthest out.
6.	5000MMF	"	26.1MC	"	"	A6	"
7.	5000MMF	"	23.4MC	"	"	A7	"
8.	5000MMF	"	25.0MC	"	"	A8	Adjust for maximum deflection. Attenuate signal generator to give less than 3 volt reading. Two peaks may be obtained use peak that occurs when slug is farthest out. Repeat steps 5, 6, 7 and 8 until no further improvement may be made.

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope for horizontal deflection. Shunt the vertical amplifier terminals with .01MFD capacitor.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
9.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V5). Low side to chassis.	24MC (10MC Sweep)	20.4MC 21.9MC 23.1MC 26.4MC	Any	Vert. Amp. to Point (A) Low side to chassis.		Check curve obtained with Fig 1. Slight adjustment of A5, A6, A7, & A8 may be necessary to obtain approximately same curve and placement of markers.

SOUND IF ALIGNMENT

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
10.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V5). Low side to chassis.	21.9MC	Any	DC Probe to Point (A) Common to Point (B)		Tune signal generator to dip on VTVM. Leave at this setting throughout sound IF alignment.
11.	5000MMF	"	As obtained above.	"	DC Probe to Point (C) Common to chassis.	A9, A10, A11, A12	Adjust for maximum deflection.
12.	5000MMF	"	"	"	DC Probe to Point (D) Common to chassis.	A13	" " " "
13.	5000MMF	"	"	"	DC Probe to Point (E) Common to chassis.	A14	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. Repeat steps 12 and 13.

SOUND DISCRIMINATOR ALIGNMENT CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope for horizontal deflection.

Shunt the vertical amplifier terminals with .01MFD capacitor.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
14.	5000MMF	High side to pin 1 (Grid) of 6BA6 (V5). Low side to chassis.	21.9MC (1MC Sweep)	21.9MC	Any	Vert. Amp. to Point (E) Low side to chassis.		Check curve obtained to see that it corresponds to Fig 2. Slightly retouch A13 for maximum amplitude and straightness of the diagonal line going from peak to peak and A14 so 21.9MC marker appears at exact center of pattern.

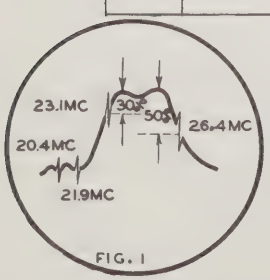


FIG. 1

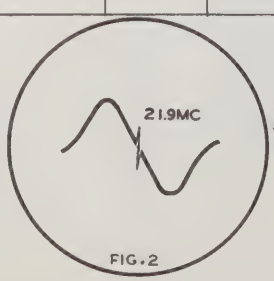


FIG. 2

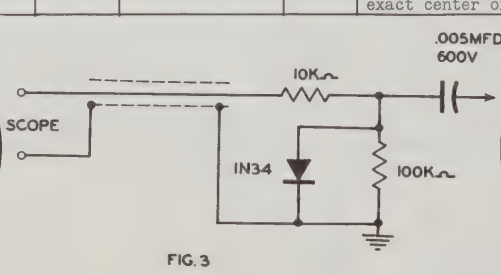


FIG. 3

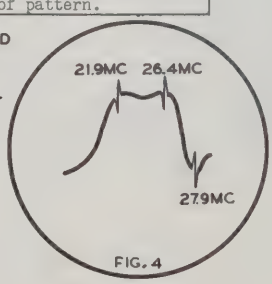


FIG. 4

RF TUNER ALIGNMENT

Remove the 1st Video IF amplifier 6BA6 (V6) from its socket.
Connect a detector probe as shown in Fig 3 to the plate pin 5 of the input IF 6BA6 (V5).

(A). LOW BAND ALIGNMENT

Connect the sweep generator by means of a short piece of hookup wire wrapped around pin 8 of 7F8 (low band converter-V2).
Short the trimmer A4 on transformer L21 by means of a piece of wire.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
15.		High side to pin 8 of 7F8 (V2). (See instructions above). Low side to chassis.	24MC (10MC Sweep)	27.9MC	2	Vert. Amp. thru detector probe to pin 5 (plate) of 6BA6 (V5). Low side to chassis.	A15,A16	Adjust A15 and A16 for approximately symmetrical pattern.
16.		"	"	"	"	"	A17	Adjust A17 so 27.9MC marker drops into "notch".
17.	Repeat step 15 so pattern is similar to Fig 4.							
18.	Repeat step 16.							
19.	Repeat step 15.							
20.	Repeat step 16.							
21.	Remove the short across A4. Leave scope connected as in step 15. Turn channel 6 adjustment screw counter-clockwise until 1" of the threaded shank protrudes from the rear of the metal plate at the back of the tuner unit. Turn channel 2 adjustment screw until 5/8" protrudes from the rear of the metal plate. Depress channel 6 pushbutton firmly and turn fine tuning control to the center of its range.							

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
22.	Direct	Across antenna terminals.	87.75MC	6	DC Probe to Point (C) Common to chassis.	A18	Adjust for maximum deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
23.		High side to short lead wrapped around pin 6 (Grid) of 7AG7 (V1). Low side to chassis.	85MC (10MC Sweep)		6	Vert. Amp. thru detector probe to pin 5 (plate) of 6BA6 (V5). Low side to chassis.	A19,A20	Adjust for symmetrical over coupled response curve.
24.		"	57MC (10MC Sweep)	53.75MC	2	"	A21	Adjust for symmetrical over coupled response curve with marker dropping into "notch".
25.		"	85MC (10MC Sweep)	81.75MC	6	"	A18	"
26.	Match signal gen. output to 75Ω input.	Across antenna terminals.	"		"	"	A22,A23	Adjust for symmetrical over coupled response curve.
27.		"	85MC (10MC Sweep)	81.75MC	6	"	A24	Adjust mechanical setting screw until marker falls into "notch".
			79MC (10MC Sweep)	75.75MC	5		A25	
			69MC (10MC Sweep)	65.75MC	4		A26	
			63MC (10MC Sweep)	59.75MC	3		A27	
			57MC (10MC Sweep)	53.75MC	2		A28	

(B). HIGH BAND ALIGNMENT

Connect the sweep generator by means of a short piece of hookup wire wrapped around pin 1 of 7F8 (High band converter-V4)
Set the fine tuning control to the center of its range.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
28.		High side to short lead wrapped around pin 1 (Grid) of 7F8 (V4). Low side to chassis.	24MC (10MC Sweep)		7	Vert. Amp. thru detector probe to pin 5 (plate) of 6BA6 (V5). Low side to chassis.	A29	Adjust for symmetrical over coupled curve.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
29.	Direct	Across antenna terminals.	217MC	All push-buttons released.	DC Probe to Point (C) Common to chassis.	A30	Adjust for maximum deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
30.	Direct	High side to short lead wrapped around pin 1 (Grid) of 6AK5 (V3). Low side to chassis.	213MC (10MC Sweep)		All push-buttons released.	Vert. Amp. thru detector probe to pin 5 (Plate) of 6BA6 (V5). Low side to chassis.	A31,A32	Adjust for symmetrical over coupled curve.
31.	Match signal gen. output to 75Ω input.	Across antenna terminals.	"		"	"	A33,A34	"

ALIGNMENT CONTINUED ON NEXT PAGE.

ALIGNMENT INSTRUCTIONS (CONT.)

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
32.	Match signal gen. output to 75Ω input.	Across antenna terminals.	213MC (10MC Sweep)	209.75MC	13	"	A35	Adjust until marker falls into "notch".
			207MC (10MC Sweep)	203.75MC	12		A36	
			201MC (10MC Sweep)	197.75MC	11		A37	
			195MC (10MC Sweep)	191.75MC	10		A38	
			189MC (10MC Sweep)	185.75MC	9		A39	
			183MC (10MC Sweep)	179.75MC	8		A40	
			177MC (10MC Sweep)	173.75MC	7		A41	

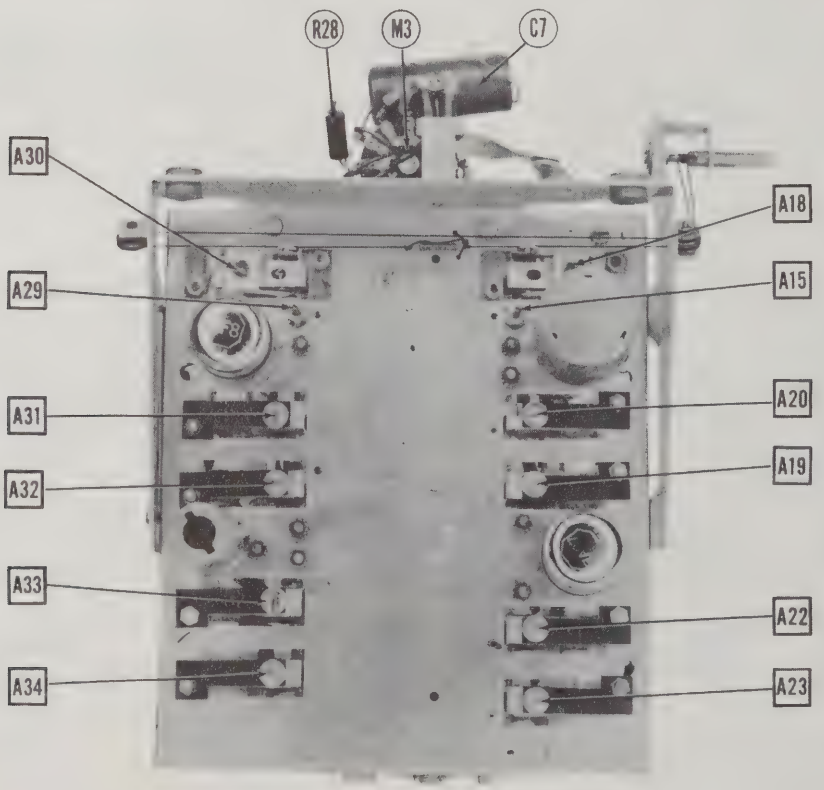
45 MC TRAP ADJUSTMENT

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
33.	5000MMF	High side to pin 1 (Grid) of 6AU6 (V10). Low side to chassis.	Off	4.5MC (400∿ Mod.)	Any	Vert. Amp. thru detector probe to pin 2 of (V11)Low side to chassis.	A42	Adjust for minimum amplitude of 400∿ note.

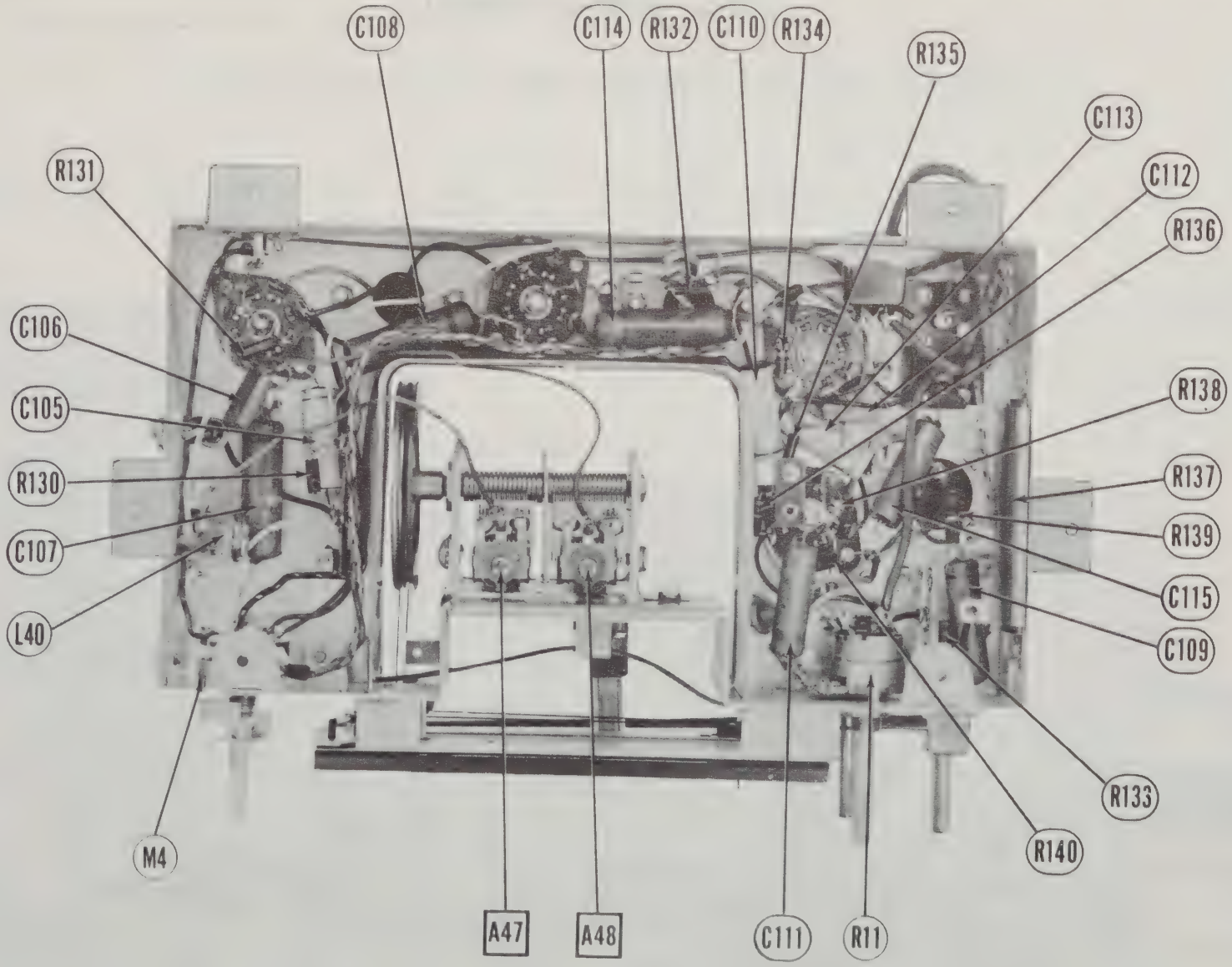
RADIO ALIGNMENT

To set pointer turn tuning cap. fully closed and set pointer to last reference mark at low frequency end of dial. Loop should be maintained in same relative position to chassis as when receiver is in cabinet. Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

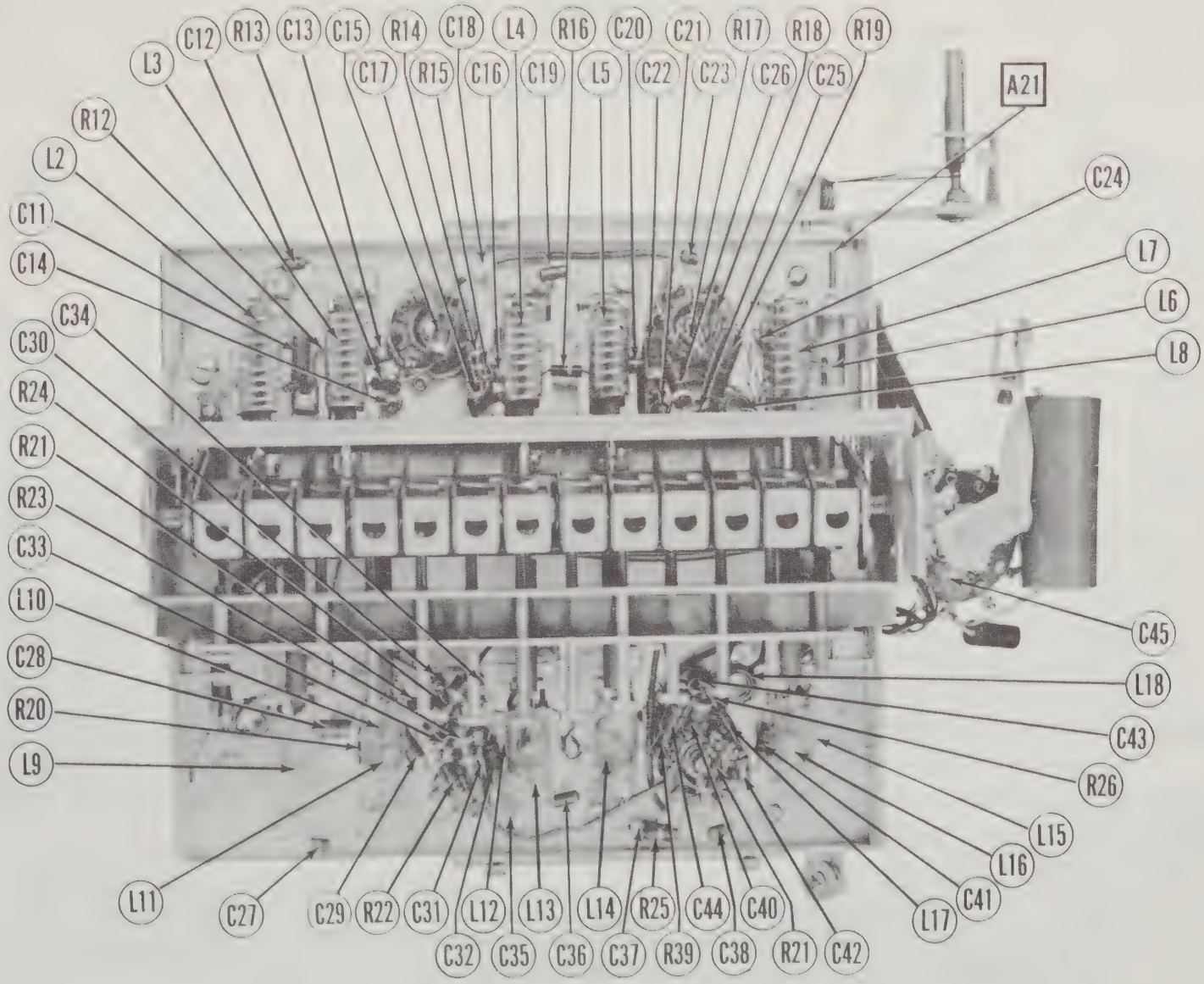
	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	BAND SWITCH POS.	RADIO DIAL SETTING	OUTPUT METER	ADJUST	REMARKS
34	.1MFD	High side to antenna stator of tuning cap. Low side to chassis.	455KC	Radio	Tuning cap fully closed	Across voice coil	A43, A44, A45, A46	Adjust for maximum output.
35	200MMF	High side to external antenna terminal. Low side to chassis.	1650KC	Radio	Tuning cap fully open	"	A47	" " " "
36	200MMF	"	1400KC	Radio	Tune for maximum signal.	"	A48	Adjust for maximum output. Pointer should fall on 1400KC calibration mark on dial backplate.



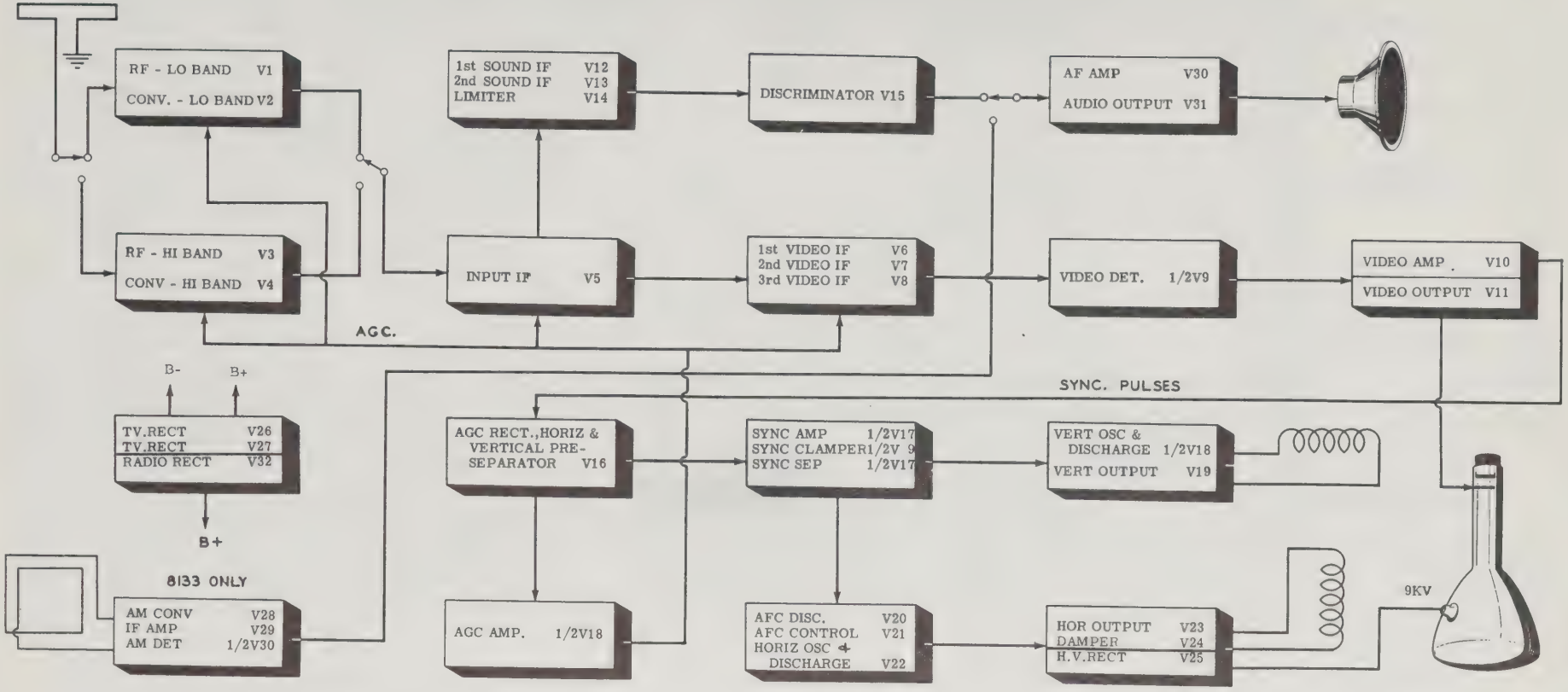
RF TUNER-RIGHT SIDE



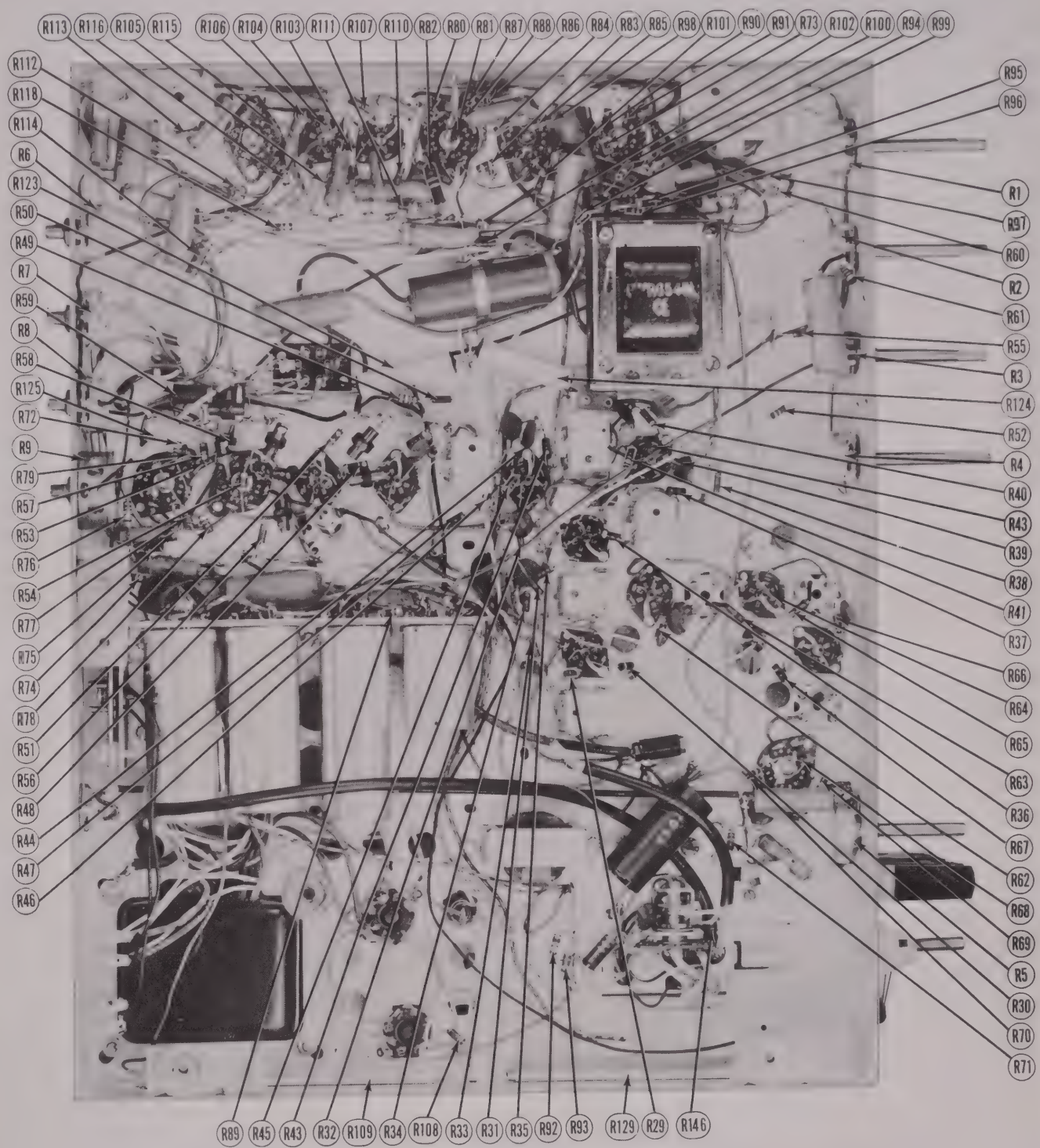
RADIO CHASSIS-BOTTOM VIEW



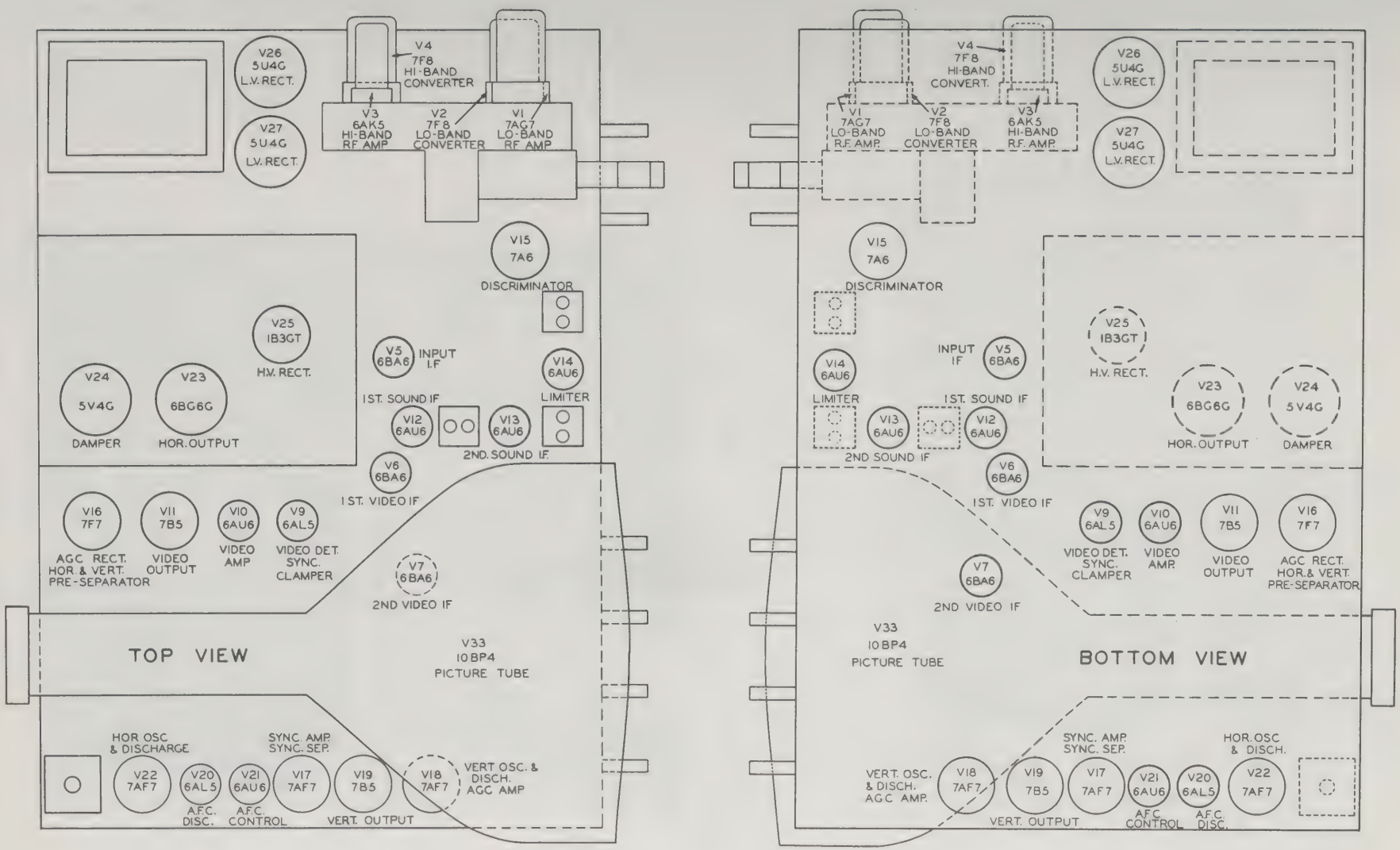
RF TUNER-LEFT SIDE



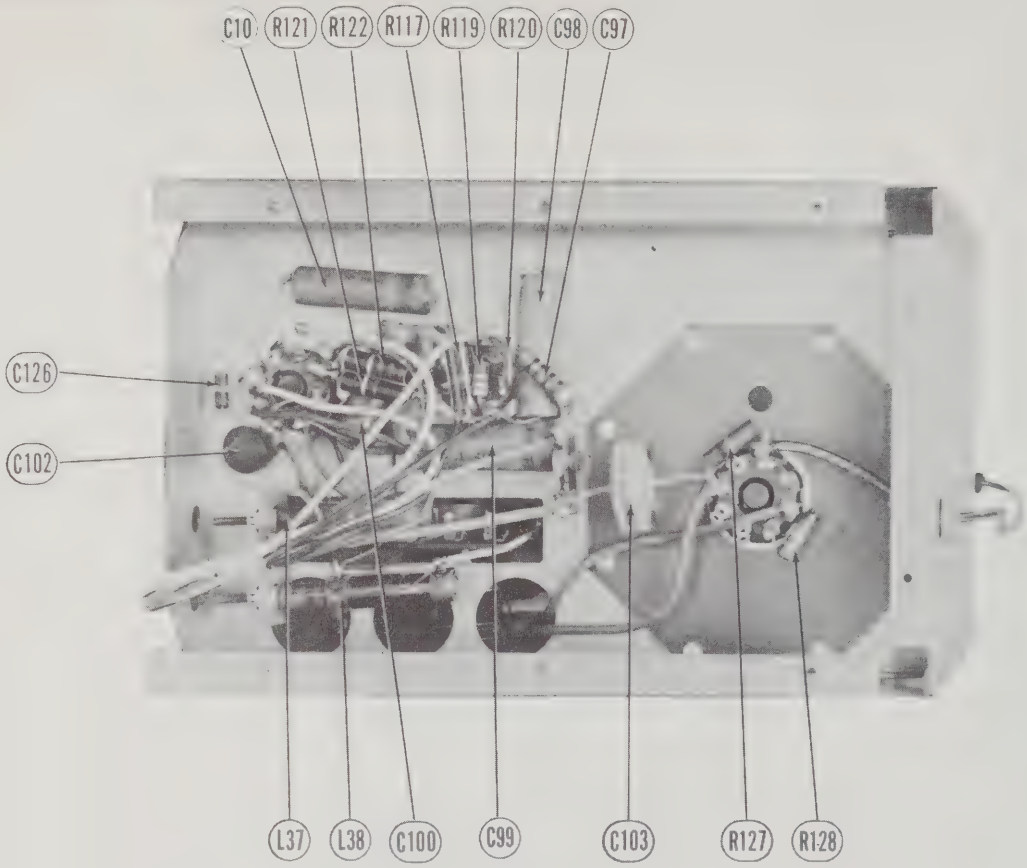
BLOCK DIAGRAM



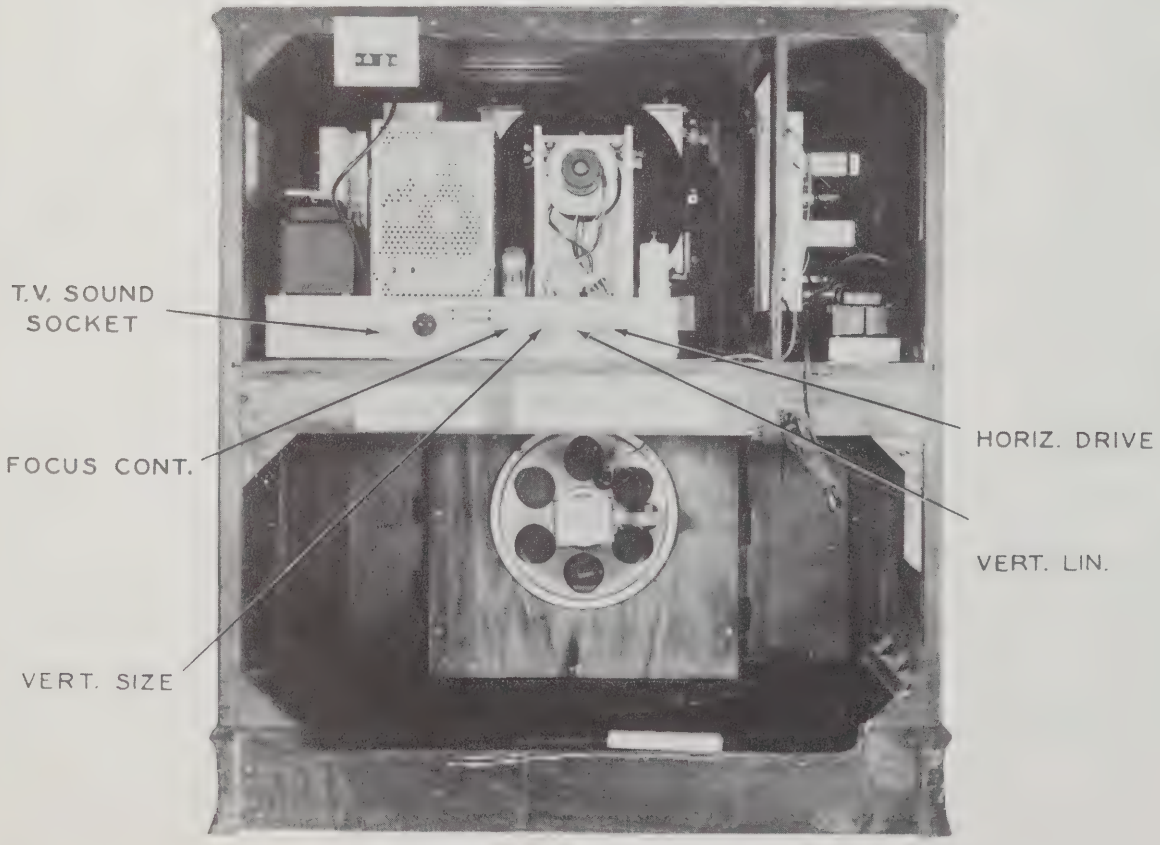
CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION



TUBE PLACEMENT CHART



HIGH VOLTAGE SUPPLY - BOTTOM VIEW



CABINET - REAR VIEW

HORIZONTAL OSCILLATOR ALIGNMENT

CHECK OF HORIZONTAL OSCILLATOR ALIGNMENT

Turn the horizontal hold control (on the front panel) to the extreme counterclockwise position. The picture should remain in horizontal sync. Momentarily remove the signal by releasing the channel push button and then depressing it again. Normally the picture will pull into sync.

Turn the horizontal hold control to the extreme clockwise position. The picture should remain in sync. Momentarily remove the signal as noted above. Again the picture should normally pull into sync.

If the receiver passes the above checks and the picture is normal and stable, the horizontal oscillator is properly aligned.

ALIGNMENT OF HORIZONTAL OSCILLATOR

If in the above check the receiver failed to hold sync with the hold control at either extreme or failed to pull into sync after momentory removals of the signal, make the adjustments under "Slight Retouching Adjustments." If, after making these retouching adjustments, the receiver fails to pass the above checks or if the horizontal oscillator is completely out of adjustment, then make the adjustments under "Complete Realignment."

SLIGHT RETOUCHING ADJUSTMENTS

Tune in a television station and adjust the fine tuning control for best sound quality. Sync the picture and adjust the contrast control for normal contrast. Turn the horizontal hold control to the extreme position in which the oscillator fails to hold or to pull in. Turn the frequency adjustment B2 on the top of horizontal discriminator transformer until the oscillator pulls into sync. Check hold and pull-in for the both extreme positions of the hold control.

COMPLETE REALIGNMENT

Tune in a television station and adjust the fine tuning control for best sound quality. Turn the frequency adjustment B2 until the picture is synchronized. (If the picture is not synchronized vertically, adjust the vertical hold.) Adjust the picture controls for normal picture.

Turn the phase adjustment screw B1 until the blanking bar, which may appear in the picture, moves to the right and off the raster. The range of this adjustment is such that it is possible to hit an unstable condition(ripples in the raster). The screw must be turned clockwise from the unstable position.

Turn the horizontal hold control on the front panel to the extreme counterclockwise position. Turn frequency adjustment screw clockwise until the picture falls out of sync. Then turn it slowly counterclockwise to the point where the picture falls in sync again.

Readjust B1 so that the left side of the pictue is close to the left side of the raster, but does not begin to fold over.

Turn horizontal hold to extreme clockwise position. The right side of the picture should be close to the right side of the raster, but should not begin to fold over. If it does, readjust B1.

Momentarily remove the signal as noted above. When the signal is restored, the picture should fall in sync. If it doesn't, turn the B2 counterclockwise until the picture falls in sync.

Turn horizontal hold to extreme counterclockwise position. Remove the signal momentarily as noted above. When the signal is restored, the picture should fall in sync.

NOTE: If the picture does not pull in sync after momentary removals of signal in both extreme positions of horizontal hold, the pull-in range may be inadequate, though not necessarily. A pull-in through 3/4 of the hold control range may still be satisfactory.

There is a difference between the pull-in range and hold-in range of frequencies. Once in sync, the circuit will hold 50% to 100% more variation in frequency than it can pull in. The range of the horizontal hold control is only approximately equal to the pull-in range. Considerable variation may be found due to variations in the cut-off characteristic of the horizontal oscillator control tubes.

DISASSEMBLY INSTRUCTIONS

MODEL 8133 (TV CHASSIS)

1. Remove six push-on type control knobs.
2. Remove twelve phillips head screws holding back cover. Remove back cover.
3. Remove five screws holding chassis. Remove chassis.
4. Remove speaker plug from speaker.
5. Remove four 11/32" hex nuts holding speaker. Remove speaker.

MODEL 8133 (AM CHASSIS)

1. Remove four push-on type control knobs.
2. Remove TV audio plug from chassis.
3. Remove AM antenna leads from loop.
4. Remove power plug from tuner chassis.
5. Remove three screws holding power supply chassis. Remove chassis.
6. Remove four screws holding chassis. Remove chassis.

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	Lo Band RF Amp.	7AH7	7AH7	8V	
V2	Lo Band Osc.	7F8	7F8	9BW	
V3	Hi Band RF Amp.	6AK5	6AK5	7HD	
V4	Hi Band Conv.	7F8	7F8	9BW	
V5	Input IF	6BA6	6BA6	7SK	
V6	1st Video IF	6BA6	6BA6	7SK	
V7	2nd Video IF	6BA6	6BA6	7SK	
V8	3rd Video IF	6AU6	6AU6	7SK	
V9	Video Det.-Sync.				
	AGC Rect.-Hor. & Vert. Sep.-Separator	7F7	7F7	9AC	
V10	Video Amp.	6AU6	6AU6	7SK	
V11	Video Output	7BH	7BH	9AB	
V12	1st Sound IF	6AU6	6AU6	7SK	
V13	2nd Sound IF	6AU6	6AU6	7SK	
V14	Limiter	6AU6	6AU6	7SK	
V15	Discriminator	7A8	7A8	7AD	
V16	AGC Rect.-Hor. & Vert. Sep.-Separator	7F7	7F7	9AC	
V17	Sync. Amp.-Sync Sep.	7AF7	7AF7	9AC	
V18	Vert. Osc. & Blanker-AGC Amp.	7AF7	7AF7	9AC	
V19	Vert. Output	7BH	7BH	9AB	
V20	2nd Det.	6AL5	6AL5	9BT	
V21	1st Sound	6AU6	6AU6	7SK	
V22	Sound Det.&Ampl.	7AF7	7AF7	9AC	
V23	Hor. Output	6BQ6G	6BQ6G	9BT	
V24	Damper	1V2Y	1V2Y	5L	
V25	RF Rect.	1B3GT	1B3GT	5C	
V26	LV Rect.	6U4G	6U4G	5T	
V27	LV Rect.	6U4G	6U4G	5T	
V28	LV Reg.	6AU6	6AU6	7SK	
V29	AM Det.-AVC-AF Amp.	7A7	7A7	7AL	
V30	AM IF Amp.	7A7	7A7	7AL	
V31	TV RF Amp.	6AF4	6AF4	9V	
V32	TV RF Amp.	6AF8	6AF8	9BT	
V33A	Audio Output	7C5	7C5	9AA	
B	Audio Output	7B5	7B5	9AE	
V34	Audio Rectifier	7Z4	7Z4	5AB	
V35	Picture Tube	10BP4	10BP4		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	40	500	R6641-1	AF38K	UP54C2			TVL-20	▲ Filter
B	40	500							▲ Filter
C2A	40	500	R6648	AF38K	UP98J			TVL-20	▲ Filter
B	40	400			995				▲ Filter
C3A	40	500	R65484	AF12K16D	UP1N5			TVL-9	▲ Filter
B	80	150			502			TVA-19	▲ Filter
C4A	10	450	R6648	AF8K	UP70C			TVL-68	▲ Vert. Output Dec.
B	30	450		AF8K150-50	1066			**	■ Decoupling
C	80	150							▲ Bias Filter
C5	100	100	R6648-5	BR8K15	BR015			TVA-19	Vert. Output Cath. Byp
C6	10	25	R6648-8	BP8K25	BP10A			TVA-5	AGC Filter
C7	30	450	R6648-6	BR8K45	BR104S			TVA-21	Decoupling
C8A	30	450	R6648-9	AF8K34A	UP4448C			EL-330	◓ Filter †
B	30	450							■ Filter
C	30	450							Output Cath. Byp. Filter ‡
C9	40	450	R67328						Output Cath. Bypass ‡
C10	25	25	R59648						Fixed Trimmer
C11	6								RF Coupling
C12	1.5								
C13	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AGC Filter
C14	50								" " *
C15	5.0			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	LB RF Fil. Bypass
C16	50			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	LB RF Screen Bypass
C17	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	RF Bypass
C18	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Coupling
C19	1					NP0K-1.5			" "
C20	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	LB Conv. Grid Filter
C21	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	LB Conv. Cath. Bypass
C22	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	LB Conv. Fil. Bypass
C23	0.2								Osc. Coupling
C24	25			1468-00002	5W5Q25	GP1K-25	MO.5-425	MS-425	Osc. Feedback
C25	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	RF Bypass
C26	10			1468-00001	5R5Q1	NP0K-10	MO6.5-41	MS-41	Fixed Trimmer
C27	1.5					NP0K-1.5			RF Coupling
C28	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	AGC Filter
C29	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	" "
C30	62								" "
C31	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	HB RF Fil. Bypass
C32	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	HB RF Screen Bypass
C33	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	HB RF Decoupling .
C34	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	RF Bypass
C35	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	RF Coupling
C36	1					NP0K-1.5			" "
C37	25			1468-0000025	5W5Q25	GP1K-25	MO.5-425	MS-425	" "
C38	0.2								Osc. Coupling
C39	500			1468-0005	5W5T5	GP2K-500	MO.5-35	1FM-35	HB Conv. Fil. Bypass
C40	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	HB Conv. Cath. Bypass
C41	25			1468-0000025	5W5Q25	GP1K-25	MO.5-425	MS-425	Osc. Feedback
C42	1					NP0K-1.5			" "
C43	500			1468-0005	5W5T5	323-500	MO.5-35	1FM-35	RF Bypass
C44	10			1469-00001	5R5Q1	NP0K-10	MO6.5-41	MS-41	Fixed Trimmer
C45	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C46	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AGC Filter
C47	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Input IF Decoupling
C48	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	" " "
C49	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	" " "
C50	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	AGC Filter
C51	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	" "
C52	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st V. IF Decoupling
C53	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	" " "
C54	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C55	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd V. IF Cath. Bypass
C56	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd V. IF Screen Bypass
C57	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd V. IF Decoupling
C58	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd V. IF Cath. Bypass
C59	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd V. IF Screen Bypass
C60	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	3rd V. IF Decoupling
C61	3.3								Fixed Trimmer
C62	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	RF Bypass
C63	10			1468-00001	5W5Q1	GP1K-10	MO.5-41	MS-41	Diode Filter
C64	5			1469-000005	5R5V5	NP0K-5	MO6.5-55	MS-55	Fixed Trimmer *
C65	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st S. IF Cath. Bypass
C66	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	1st S. IF Decoupling
C67	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd S. IF Cath. Bypass
C68	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	2nd S. IF Decoupling
C69	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Limiter Grid Filter
C70	50			1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Limiter Decoupling
C71	.05	400		P488-05	GT4S5		ST-4-05	TM-15	RF Bypass
C72	680	500			1W5T7		MW.5-37	1FM-37	Audio Coupling §
C73	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	De-emphasis *
C74	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Tone Comp.
C75	.2	400		P488-22	GT4P2		ST-4-2	TC-2	Disc. Fil. Bypass
									Sync. Pre-Sep. Cath. Byp.
C76	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Integrator Net.
C77	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Sync. Pre-Sep. Cath. Byp.
C78	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Sync. Coupling
C79	100			1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	" "
C80	390	500		1468-0004	5W5T4	GP2K-500	MO.5-34	1FM-34	Sync. Sep. Cath. Bypass
C81	.002	400		P688-002	GT6D2	GP2M-002	ST-6-002	TM-22	Integrator Net.
C82	.005	400		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" "
C83	.005	400		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	" "
C84	5000	500		1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Vert. Osc. Grid Cap.
C85	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Vert. Discharge
C86	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Vert. Coupling
C87	100			1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Hor. Sync. Coupling
C88	.005	400		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Fixed Trimmer
C89	.004	400		P688-004	GT6D4		ST-6-004	TM-24	Sync. Coupling
C90	.05	400		P488-05	GT6S5		ST-4-05	TM-15	AFC Filter
C91	100			1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	Phase Shifter
C92	.015	400	R67179	P488-015	GT6S15				Fixed Trimmer
C93	.004	400		P688-004	GT6D5		ST-6-004	TM-24	Hor. Osc. Grid Cap.
C94	.05	400		P488-05	GT4S5		ST-4-05	TM-15	Hor. Osc. Plate Dec.
C95	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Hor. Coupling
C96	680	500			1W5T7		MW.5-37	1FM-37	Hor. Discharge
C97	1000			1468-001	1W5D1	GP2L-001	MW.5-21	1FM-21	Hor. Coupling
C98	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Hor. Output Cath. Bypass
C99	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Hor. Output Screen Byp.
C100	.03	400		P488-03	GT4S3		ST-6-03	TM-13	Damper Filter
C101	.05	400		P488-05	GT4S5		ST-6-05	TM-15	" "
C102	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	" "
C103	500	10000				410-500			HV Filter
C104	.2	400		P488-22	GT4P2		ST-4-2	TC-2	Sweep Coupling
C105	.05	200		P288-05	GT2S5		ST-4-05	TM-15	AVC Filter †
C106	50	500		1468-00005	5W5Q5	GP1K-50	MO.5-45	1FM-45	Osc. Grid Cap. †
C107	.1	400		P488-1	GT4P1		ST-4-1	TM-1	Decoupling †
C108	.05	200		P288-05	GT2S5		ST-4-05	TM-15	AVC Filter †
C109	.02	200		P288-02	GT2S2		ST-4-02	TM-12	Tone Comp. †
C110	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling †
C111	.001	600		P688-001	GT6D1	GP2L-001	ST-6-001	TM-21	Tone Comp. †
C112	100	500		1468-0001	5W5T1	GP1K-100	MO.5-31	1FM-31	AF Plate Bypass †
C113	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling †
C114	.1	400		P488-1	GT4P1		ST-4-1	TM-1	AF Plate Decoupling †
C115	.004	600		P688-004	GT6D4		ST-6-004	TM-24	Output Plate Bypass † ♦
C116	.005	600		P688-005	GT6D5	GP2M-005	ST-6-005	TM-25	Audio Coupling ‡
C117	680	500		1468-0005	1W5T7	GP2K-500	MW.5-37	1FM-37	AF Plate Bypass ‡
C118	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Audio Coupling ‡
C119	.005	600		P688-005	GT6D5		ST-6-005	TM-25	Output Plate Bypass ‡
C120	.2	400		P488-22	GT4P2		ST-4-2	TC-2	Pic. Tube Cath. Dec.

* Not used in all models.
† Used only in model 8133.
‡ Used only in model 8132.
§ Some models use .005MFD in this application.
♦ Some models use .02MFD in this application.
** Omit 20MFD section.
†† Use two in parallel.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
R1	1 Meg.	½	R65447	Q11-137	M-61-S	Vert. hold control
R2	50KΩ	½	R65449	Q11-123	M-44-S	Brightness control
R3	400KΩ	½	R65445	Q11-113	M-30-S	Contrast control
R4	50KΩ	½	R65449	Q11-123	M-44-S	Horiz. hold control
R5	2 Meg.	½	R63864	Q13-139X	T-115	Volume control tapped @ 500KΩ
R6A	1 Meg.	½	R65448	Q11-137	AM-61-S	Horiz. drive control
B	Shaft		Not Req.	SQ	KSS-3	Attach to R6A Per Instructions
R7A	5000Ω	½	R67085	Q11-114	AM-19-S	Vert. linearity control
B	Shaft		Not Req.	SQ	KSS-3	Attach to R7A Per Instructions
R8A	2.5 Meg.	½	R63869	Q11-239	AM-83-S	Vert. size control
B	Shaft		Not Req.	SQ	KSS-3	Attach to R8A Per Instructions
R9	600Ω	2	R65450	W-750	58-750	Focus control
R10	500KΩ	½	R62612	Q16-133X	T-88	Radio volume control tapped @ 50KΩ
R11A	2 Meg.	½	R62529	Q13-139	M-66-Z	Radio tone control
B	Switch		Not Req.	76-1	SW-A	Attach to R11A Per Instructions

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
					ALL RESISTORS ARE ±10% UNLESS OTHERWISE STATED.
R12	2700Ω	½			Lo Band RF Grid
R13	1000Ω	½		BTS-1000	AGC Network 20%
R14	10KΩ	½			Lo Band RF Screen
R15	2700Ω	½		BTS-2700	Lo Band RF Plate
R16	100KΩ	½			Lo Band Conv. Grid 20%

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: SILVERTONE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R17	680Ω	½		BTS-680	Lo Band Conv. Cathode 20%
R18	22KΩ	½		" "	Lo Band Osc. Grid 20%
R19	10KΩ	1			Lo Band Osc. Anode 20%
R20	27000Ω	½			Hi Band RF Grid
R21	10000Ω	½		BTS-1000	AGC Network 20%
R22	47KΩ	½			Hi Band RF Screen 20%
R23	56000Ω	1			Hi Band RF Plate
R24	39000Ω	1			Hi Band RF Decoupling
R25	100KΩ	½			Hi Band Osc. Grid 20%
R26	12000Ω	½		BTS-1200	Hi Band Conv. Cathode
R27	10KΩ	½			Hi Band Conv. Grid 20%
R28	22000Ω	2		BT-2-2200	Filter 20%
R29	22000Ω	½		BTS-2200	Input IF Grid
R30	82Ω	½			Input IF Cathode
R31	10000Ω	½		BTS-1000	Input IF Decoupling 20%
R32	100Ω	½		" "	" " " 20%
R33	10000Ω	½		BTS-1000	AGC Network 20%
R34	10000Ω	½		BTS-1000	" " " 20%
R35	22000Ω	½		BTS-2200	1st Video IF Grid
R36	82Ω	½			1st Video IF Cathode
R37	10000Ω	½		BTS-1000	1st Video IF Decoupling 20%
R38	100Ω	½		" "	" " " 20%
R39	15KΩ	½			2nd Video IF Grid
R40	120Ω	½			2nd Video IF Cathode
R41	27KΩ	½		BTS-27K	2nd Video IF Screen
R42	10000Ω	½		BTS-1000	2nd Video IF Decoupling 20%
R43	22KΩ	½			3rd Video IF Grid
R44	120Ω	½			3rd Video IF Cathode
R45	27KΩ	½		BTS-27K	3rd Video IF Screen
R46	82000Ω	½		BTS-8200	3rd Video IF Plate
R47	10000Ω	½		BTS-1000	3rd Video IF Decoupling 20%
R48	22KΩ	½			Peaking Coil Shunt 5%
R49	39000Ω	½		BTS-3900-5%	Video Det. Load 5%
R50	10Ω	½			Video Det. Load 20%
R51	27Ω	½			Video Amp. Cathode 5%
R52	3300Ω	½		BTS-3300-5%	Video Amp. Plate 5%
R53	10KΩ	½		BTS-10K	Pre. Sep. Grid 20%
R54	47000Ω	½		BTS-4700-5%	Video Amp. Plate 5%
R55	100Ω	½		" "	" " "
R56	120Ω	½			Video Output Cathode 5%
R57	15KΩ	½			Video Output Trans. Shunt 5%
R58	22KΩ	½			" " " " 5%
R59	4700Ω	2		BT-2-4700	Voltage Dropping
R60	33KΩ	½		BTS-33K	Voltage Divider
R61	33KΩ	½		BTS-33K	" "
R62	120Ω	½			1st Sound IF Cathode
R63	1000Ω	½		BTS-1000	1st Sound IF Decoupling 20%
R64	120Ω	½			2nd Sound IF Cathode
R65	10000Ω	½		BTS-1000	2nd Sound IF Decoupling 20%
R66	47KΩ	½		BTS-47K	Limiter Grid
R67	10000Ω	½		BTS-1000	Limiter Decoupling 20%
R68	100KΩ	½		BTS-100K	Discriminator Load
R69	100KΩ	½		BTS-100K	" "
R70	100KΩ	½		BTS-100K	De-emphasis
R71	47KΩ	½		BTS-47K	Tone Compensation
R72	47KΩ	½		BTS-47K	Pre. Sep. Plate
R73	1 Meg.	½		BTS-1 Meg.	AGC Amp. Grid
R74	560KΩ	½		BTS-560K-5%	Pre. Sep. Cathode 5%
R75	56KΩ	½		BTS-56K-5%	" " " 5%
R76	680KΩ	½		BTS-680K	" " "
R77	27KΩ	½		BTS-27K	Pre. Sep. Plate
R78	27KΩ	½		BTS-27K	" " "
R79	47KΩ	½		BTS-47K	Pre. Sep. Grid 20%
R80	330Ω	½		BTA-330	Sync. Amp. Cathode
R81	1 Meg.	½		BTS-1 Meg.	Sync. Amp. Grid
R82	220Ω	2		BT-2-22K	Sync. Amp. Plate
R83	3.9 Meg.	½		BTS-3.9 Meg.	Sync. Sep. Grid
R84	22000Ω	½		BTS-2200-5%	Sync. Sep. Cathode 5%
R85	4700Ω	½		BTS-4700	Sync. Sep. Cathode
R86	22KΩ	½		BTS-22K	Integrator
R87	82000Ω	½		BTS-8200	"
R88	82000Ω	½		BTS-8200	"
R89	100KΩ	½		BTS-100K	Vert. Osc. Decoupling
R90	10KΩ	½		BTS-10K	AGC Amp. Plate
R91	10Ω	½			Voltage Divider
R92	100KΩ	½		BTS-100K	Voltage Divider
R93	6.8 Meg.	½		BTS-6.8 Meg.	" "
R94	100KΩ	½		BTS-100K	" "
R95	2.2 Meg.	½		BTS-2.2 Meg.	" "
R96	220KΩ	½		BTS-220K	Vert. Osc. Plate
R97	1.2 Meg.	½		BTS-1.2 Meg.	Vert. Osc. Grid
R98	2.2 Meg.	½		BTS-2.2 Meg.	Vert. Output Grid 20%
R99	33000Ω	½		BTS-3300-5%	Vert. Peaking 5%
R100	22KΩ	½		BTS-22K	Vert. Osc. Coil Shunt 20%
R101	1200Ω	½		BTS-1200	Vert. Output Cathode
R102	1000Ω	½		BTS-1000	Vert. Output Decoupling
R103	4.3Ω	½	R67223		AFC Discr. Filament
R104	470KΩ	½		BTS-470K	AFC Discr. Load
R105	470KΩ	½		BTS-470K	AFC Filter 20%
R106	470KΩ	½		BTS-470K	AFC Discr. Load
R107	1 Meg.	½		BTS-1 Meg.	AFC Discr. Load 20%
R108	100Ω	½			AFC Control Cathode 5%
R109A	9622	10	R67104		Filter
B	5600Ω	10			Voltage Divider
R110	10000Ω	½		BTS-1000	AFC Control Grid 20%
R111	10KΩ	½		BTS-10K	" " "
R112	27KΩ	½		BTS-27K	Horiz. Osc. Grid
R113	22KΩ	½		BTS-22K	Horiz. Osc. Coil Shunt
R114	3300Ω	1		BTA-3300	Horiz. Osc. Plate Decoupling
R115	2.2 Meg.	½		BTS-2.2 Meg.	Horiz. Discharge Grid 20%
R116	180KΩ	½		BTS-180K	Horiz. Discharge Plate
R117	100Ω	2			Horiz. Output Cathode
R118	10KΩ	½		BTS-10K	Horiz. Peaking
R119	470KΩ	½		BTS-470K	Horiz. Output Grid
R120	100Ω	1			Parasitic Suppressor
R121	22KΩ	1		BTA-22K	Horiz. Output Screen

SILVERTONE
MODELS 8132 (Ch. 101.854)
8133 (Ch. 101.829-1, 101.846)

PARTS LIST AND DESCRIPTIONS (Continued)

RESISTORS (CONT.)

ITEM No.	RATING		REPLACEMENT DATA		IDENTIFICATION CODES	
	RESISTANCE	WATTS	SILVERTONE PART No.	IRC PART No.		
R122	33KΩ	1		BTA-33K	Horiz. Output Screen	
R123	3500Ω	10	R67190	AB-3500	Damper Filter	
R124	3500Ω	10	R67190	AB-3500	" "	
R125	220Ω	3	R67024		Current Limiter	
R126	100KΩ	½		BTS-100K	Acc. Anode Decoupling	
R127	1 Meg.	1			HV Filter	
R128	3.6Ω	½	R67236		HV Filament	
R129A	82Ω	5	R65789		Bias Network	
B	220Ω	5			" "	
C	510Ω	5			" "	
R130	22KΩ	½		BTS-22K	AVC Network	20%
R131	22KΩ	½		BTS-22K	AM Osc. Grid	20%
R132	2.2 Meg.	½		BTS-2.2 Meg.	AVC Network	20%
R133	22KΩ	½		BTS-22K	Tone Compensation	20%
R134	4.7 Meg.	½		BTS-4.7 Meg.	AF Grid	20%
R135	2.2 Meg.	½		BTS-2.2 Meg.	AF Plate	20%
R136	470KΩ	½		BTS-470K	AF Plate Decoupling	20%
R137A	4000Ω	4	R65434	AB-4000	Filter	20%
B	2000Ω	2		AB-2000	Filter	20%
R138	470KΩ	½		BTS-470K	Output Grid	20%
R139	330Ω	1		BTA-330	Output Cathode	20%
R140	47Ω	½			Parasitic Suppressor	20%
R141	4.7 Meg.	½		BTS-4.7 Meg.	AF Grid	20%
R142	220KΩ	½		BTS-220K	AF Plate	20%
R143	470KΩ	½		BTS-470K	Output Grid	20%
R144	560Ω	1		BTA-560	Output Cathode	20%
R145	1000Ω	2		BT-2-1000	Filter	20%
R146	470Ω	½			1st Video IF Coil Shunt	

Items R130 thru R140 used in model 8133 only.
Items R141 thru R145 used in model 8132 only.

TRANSFORMER (POWER)

ITEM No.	RATING				REPLACEMENT DATA			
	PRI.	SEC. 1	SEC. 2	SEC. 3	SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.
T1A	117VAC @ 2.5A	750VCT @ .260 ADC	5VAC @ 6A	5VAC @ 2A	R65463 #	P-8156 ▲	TP-395	P-3059
		SEC. 4 6.3 @ 7.5A						
T1B	117VAC				R67304 ##			
T2	117VAC @ .37A	520VCT @ .061 ADC	6.3VAC @ 2.4A		R65432 #	P-6011 ♦	PH-70 ♦	P-3048

▲ Drill new mounting holes.
♦ Add series resistor to reduce plate voltage
Used in model 8133
Used in model 8132

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING		REPLACEMENT DATA				NOTES
	DC RESISTANCE		SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.					
T3	80Ω CT	SEC. 1 9.2Ω	R67083				Hor. Discr. Trans.
		SEC. 2 41Ω					
T4	180Ω	1000Ω	R65428	A-8111	TB0-1	A-3000	Vert. Osc. Trans.
T5	440Ω Tap @ 180Ω	SEC. 1 10.6Ω Tap. @ .6Ω	R65441	A-8117	TFB-1		Hor. Output Trans.
		SEC. 2 0Ω					
T6	560Ω	8.5Ω	R65451	A-8115	TS0-1	A-3035	Vert. Output Trans.
T7A	12Ω		R65461				Hor. Deflection Yoke
B	5Ω						Vert. Deflection Yoke
T8	245Ω		R65454	FC-10			Focus Coil

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING				REPLACEMENT DATA				INSTALLATION NOTES
	IMPEDANCE		DC RES.		SILVERTONE PART No.	STANCOR PART No.	CHICAGO PART No.	MERIT PART No.	
	PRI.	SEC.	PRI.	SEC.					
T9A	7500Ω	3.5Ω	760Ω Tap @ 14Ω	.75Ω	R63929 #		RO-13	A-3032	# Used in model 8133
T9B					R67316 ##				## Used in model 8132

SPEAKER

ITEM No.	RATINGS		REPLACEMENT DATA			INSTALLATION NOTES
	FIELD	V. C. IMP.	SILVERTONE PART No.	JENSEN PART No.	QUAM PART No.	
SP1A	PM	3.5Ω	R63930 #	ST-120 MOD.P10-S●	10A31	# Used in model 8133
B	PM		R67314 ##			## Used in model 8132
	CONE DIA.	V. C. DIA.				● Replace output transformer to match 6-8Ω voice coil.
SP2A	9 5/8"	1"	R63047 #			
B	5" x 7"		R67315 # #			

FILTER CHOKE

ITEM No.	RATINGS			REPLACEMENT DATA				INSTALLATION NOTES
	TOTAL DIRECT CURRENT	D. C. RESISTANCE	INDUCTANCE (0 CURRENT 1000 ↶)	SILVERTONE PART No.	STANCOR PART No.	THORDARSON PART No.	MERIT PART No.	
L1	.260A	23Ω	.5 Henry	R67133	C-2326 † †		C-2991†††	†† Drill new mounting holes.

PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

ITEM No.	USE	DC RES. PRI.	DC RES. SEC.	REPLACEMENT DATA SILVERTONE PART No.	REPLACEMENT DATA MEISSNER PART No.	NOTES
L2	Ant. Input Low Band	0Ω		R63832		
L3	Ant. Low Band	0Ω		R63832		
L4	RF Plate Low Band	0Ω		R63832		
L5	Mixer Grid	0Ω		R63832		
L6	Osc. Shunt Low Band	0Ω		R63885		
L7	Osc. Coil Low Band	0Ω		R63833		
L8	Mixer Plate Transformer Low Band	0Ω	0Ω	R63932		
L9	Ant. Input High Band	0Ω		R63831		
L10	Ant. High Band	0Ω		R63831		
L11	RF Choke	0Ω		R63947		
L12	RF Choke	0Ω		R63946		
L13	RF Plate High Band	0Ω		R63831		
L14	Mixer Grid High Band	0Ω		R63938		
L15	Osc. Shunt High Band	0Ω		R63947		
L16	Osc. High Band	0Ω		R63938		
L17	RF Choke			R63947		
L18	Mixer Plate Transformer High Band	0Ω	0Ω	R63933		
L19	Fil. Choke	0Ω		R65734		
L20	1st Video IF	.1Ω	.1Ω	R65427		
L21	2nd Video IF & 1st Sound IF	.1Ω	.1Ω	R65426		
L22	3rd Video IF	.1Ω	.1Ω	R65426		
L23	4th Video IF	.1Ω	.1Ω	R65426		
L24	5th Video IF	.1Ω	.1Ω	R65426		
L25	Peaking	5Ω		R65474		
L26	Peaking	7.5Ω		R65497		
L27	Peaking	4Ω		R67123		
L28	Peaking	4.5Ω		R67123		
L29	Peaking	6Ω		R67143		
L30	Peaking	5.5Ω		R65474		
L31	Peaking	6Ω		R67122		
L32	Trap Coil	6Ω				
L33	2nd Sound IF	.5Ω	.5Ω	R65480		
L34	3rd Sound IF	.5Ω	.5Ω	R65480		
L35	Sound Disc. Transformer	.5Ω	.1Ω	R65479		
L36	Horiz. Linearity Control	35Ω		R65453		
L37	Horiz. Linearity Control	35Ω		R65453		
L38	Width Control	.3Ω		R65452		
L39	AM Loop Ant	0Ω	2Ω	R63899		
L40	AM Osc.	6Ω		R61107	14-1060	
L41	AM 1st IF	25Ω	25Ω	R62513	16-5712	
L42	AM 2nd IF	11Ω		R60418		Can not measure secondary winding.

DIAL LIGHTS

ITEM No.	BASE TYPE	VOLTS	AMPS.	BEAD COLOR	REPLACEMENT DATA SILVERTONE PART No.		NOTES
M1	Bayonet	6-8V	0.25A	Blue			Type #44

MISCELLANEOUS

ITEM No.	PART NAME	SILVERTONE PART No.	NOTES
M2	Band Switch	R62657	Television-Radio
M3	Band Switch	R67186	Television-Band Changing
M4	Power Switch	R63489	On-Off-Television AC
M5	Fuse		Type AGC-1/4 Amp.
M6	Ion Trap	R65489	Type PM
M7	Tuning Cap.	R61100	Radio, Two Section (18-487MMF) (30-187MMF) W/T
	Cable & Socket Assy.	R65464	Picture Tube
	Escutcheon& Dial Assy	R62878	
	Escutcheon	R63937	Channel Buttons
	Safety Glass	R65488	
	Knob	R63925	Brightness Control
	Knob	R63924	Contrast Control
	Knob	R63921	Fine Tuning Control
	Knob	R63923	Horizontal Control
	Knob	R63534	On-Off, Tone Control
	Knob	R63920	Radio-Television
	Knob	R62712	Radio Tuning Control
	Knob	R62531	Volume Control
	Knob	R63926	Vertical Control

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

	Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
‡	V 1	7AG7	6.5VAC	180VDC	180VDC	0V	0V	-.1VDC	0V	0V	
‡	V 2	7F8	§-7.6VDC	0V	140VDC	0V	3.7VDC	200VDC	6.5VAC	0V	
*	V 3	6AK5	-.2VDC	0V	6.5VAC	0V	125VDC	70VDC	0V		
*	V 4	7F8	0V	6.5VAC	195VDC	3.6VDC	0V	195VDC	0V	§-2.3VDC	
	V 5	6BA6	-1.4VDC	0V	6.5VAC	0V	115VDC	115VDC	1.2VDC		
	V 6	6BA6	-.1VDC	0V	6.5VAC	0V	120VDC	120VDC	1VDC		
	V 7	6BA6	0V	0V	6.5VAC	0V	230VDC	140VDC	1.2VDC		
	V 8	6AU6	0V	0V	6.5VAC	0V	180VDC	145VDC	1VDC		
	V 9	6AL5	†0V	-29VDC	6.5VAC	0V	0V	0V	†.5VDC		
	V 10	6AU6	† -.2VDC	†.3VDC	6.5VAC	0V	†60VDC	†120VDC	†.3VDC		
	V 11	7B5	0V	†210VDC	250VDC	†60VDC	†60VDC	†75VDC	†90VDC	6.5VAC	
	V 12	6AU6	0V	0V	6.5VAC	0V	130VDC	130VDC	.8VDC		
	V 13	6AU6	0V	0V	6.5VAC	0V	130VDC	130VDC	1VDC		
	V 14	6AU6	-.2VDC	0V	6.5VAC	0V	150VDC	150VDC	0V		
	V 15	7A6	6.5VAC	8VDC	-1.8VDC	0V	0V	-1.6VDC	0V	0V	
	V 16	7F7	0V	60VDC	240VDC	60VDC	60VDC	250VDC	60VDC	6.5VAC	
	V 17	7AF7	6.5VAC	†90VDC	†350VDC	†65VDC	0V	100VDC	2VDC	0V	
	V 18	7AF7	0V	† 0V	†70VDC †250VDC	†-12VDC	45VDC	†120VDC	†75VDC	6.5VAC	
	V 19	7B5	0V	† 320VDC	† 320VDC	†90VDC	†85VDC	†0V	†26VDC †39VDC	6.5VAC	
	V 20	6AL5	0V	-11VDC	6.5VAC	1.2VAC	.4VDC	0V	-11VDC		
	V 21	6AU6	.1VDC	0V	6.5VAC	0V	200VDC	140VDC	3VDC		
	V 22	7AF7	0V	.1VDC	300VDC	-12.5VDC	† -50VDC	†47VDC †165VDC	0V	6.5VAC	
	V 23	6BG6G	0V	0V	†9.4VDC	† -.1VDC	† -.1VDC	†0V	6.5VAC	†240VDC	TOP CAP **
	V 24	5V4G	0V	310VDC	260VDC	260VDC	300VDC	260VDC	300VDC	310VDC	
	V 25	1B3GT	** DO NOT MEASURE								
	V 26	5U4G	0V	260VDC	0V	370VAC	0V	370VAC	0V	260VDC	
	V 27	5U4G	0V	260VDC	0V	370VAC	0V	370VAC	0V	260VDC	
♦	V 28	7Q7	0V	100VDC	100VDC	§-17VDC	0V	-.3VDC	0V	6.3VAC	
♦	V 29	7A7	0V	100VDC	100VDC	0V	0V	-.3VDC	0V	6.3VAC	
♦	V30A	7C6	6.3VAC	45VDC	-.5VDC	0V	-.3VDC	-.3VDC	0V	0V	
♦	V31A	7C5	0V	240VDC	205VDC	165VDC	0V	0V	10VDC	6.3VAC	
♦	V32	7Z4	6.3VAC	0V	240VAC	0V	0V	240VAC	250VDC	0V	
	V33	10BP4	0V	85VDC	PIN 10 300VDC	PIN 11 175VDC	PIN 12 6.5VAC				

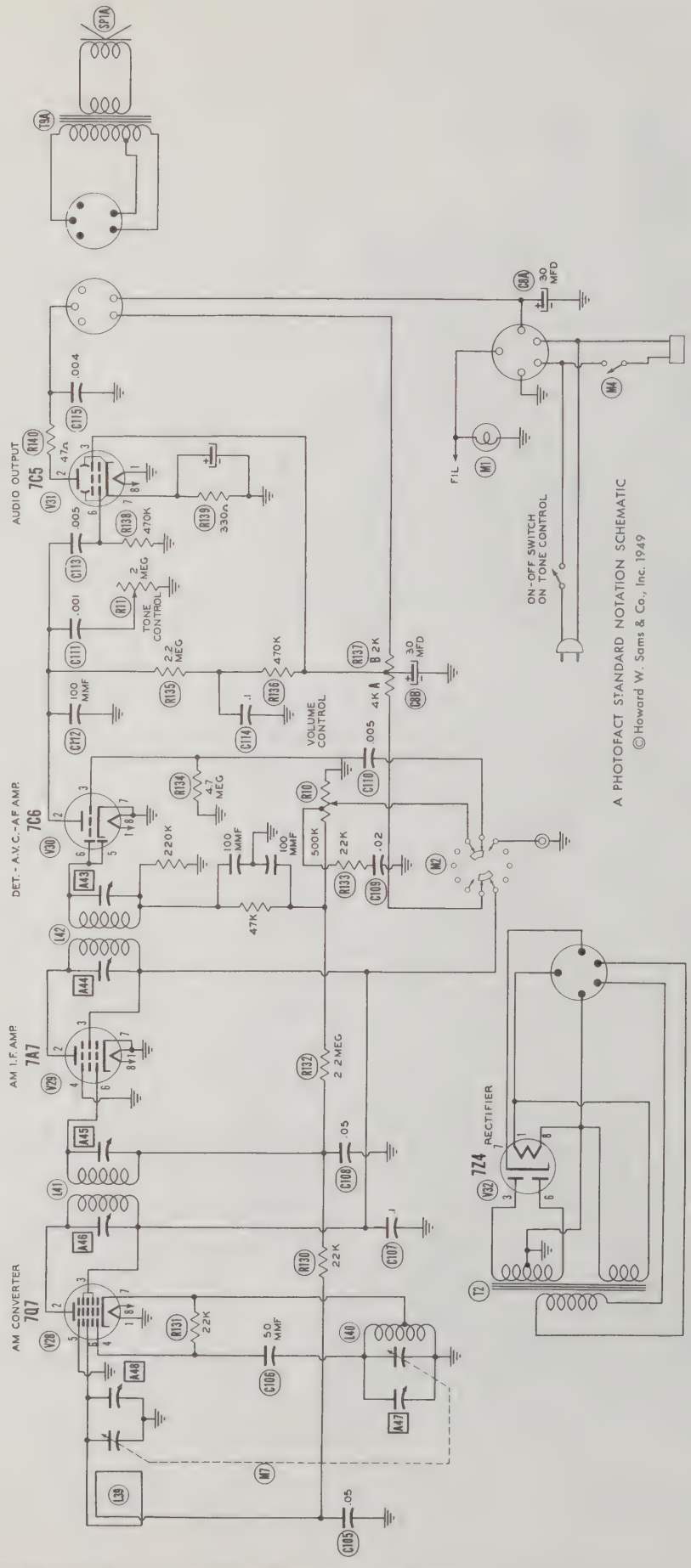
‡ Taken in Low band position.
* Taken in High band position.
† Measured from pin 7 of V22
** Do not Measure
♦ Taken in broadcast position.
§ Taken with vacuum tube voltmeter.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	7AG7	.2Ω	*4.8KΩ	*12KΩ	0Ω	0Ω	120KΩ	0Ω	0Ω	
V 2	7F8	22KΩ	.2Ω	*12KΩ	0Ω	700Ω	*2.2KΩ	0Ω	100KΩ	
V 3	6AK5	120KΩ	0Ω	.2Ω	0Ω	*12KΩ	*52KΩ	0Ω		
V 4	7F8	100KΩ	.2Ω	*2.2KΩ	1.2KΩ	0Ω	*2.2KΩ	0Ω	10KΩ	
V 5	6BA6	10KΩ	0Ω	.2Ω	0Ω	*2.2KΩ	*2.2KΩ	82Ω		
V 6	6BA6	13KΩ	0Ω	.2Ω	0Ω	*2.2KΩ	*2.2KΩ	82Ω		
V 7	6BA6	15KΩ	0Ω	.2Ω	0Ω	*1000Ω	*28KΩ	120Ω		
V 8	6AU6	22KΩ	0Ω	.2Ω	0Ω	*9.5KΩ	*29KΩ	120Ω		
V 9	6AL5	†10Ω	3.9 Meg.	.2Ω	0Ω	0Ω	0Ω	†4KΩ		
V 10	6AU6	†4KΩ	†27Ω	.2Ω	0Ω	†3.5KΩ	0Ω	†27Ω		
V 11	7B5	0Ω	*6KΩ	*1000Ω	†3.5KΩ	†3.5KΩ	†600Ω	†700Ω	.2Ω	
V 12	6AU6	0Ω	0Ω	.2Ω	0Ω	*2KΩ	*2KΩ	120Ω		
V 13	6AU6	.5Ω	0Ω	.2Ω	0Ω	*2KΩ	*2KΩ	120Ω		
V 14	6AU6	52KΩ	0Ω	.2Ω	0Ω	*2KΩ	*2KΩ	0Ω		
V 15	7A6	.2Ω	200KΩ	120KΩ	Inf.	0Ω	120KΩ	0Ω	0Ω	
V 16	7F7	0Ω	†680KΩ	*100KΩ	†80KΩ	†18KΩ	*50KΩ	†600KΩ	.2Ω	
V 17	7AF7	.2Ω	†8KΩ	*140Ω	3.9 Meg	1 Meg.	*22KΩ	330Ω	0Ω	
V 18	7AF7	0Ω	†0Ω	*1.4Meg. *300KΩ	†2 Meg.	†1.5Meg.	†10KΩ	†500Ω	.2Ω	
V 19	7B5	0Ω	*1.8KΩ	*1.8KΩ	†6KΩ	†580Ω	†2.6 Meg	†6.5KΩ †1.2KΩ	.2Ω	
V 20	6AL5	100Ω	1.5Meg.	.2Ω	2Ω	900KΩ	0Ω	1.5Meg.		
V 21	6AU6	1.5Meg.	0Ω	.2Ω	0Ω	*60Ω	*1000Ω	100Ω		
V 22	7AF7	0Ω	9Ω	*4KΩ	70KΩ	†2.5Meg.	*1Meg. *200KΩ	†0Ω	.2Ω	
V 23	6BG6G	Inf.	0Ω	†100Ω	†500KΩ	†500KΩ	†0Ω	.2Ω	*14KΩ	TOP CAP ‡200Ω
V 24	5V4G	Inf.	‡0Ω	*25Ω	*35Ω	*6KΩ	*35Ω	*120KΩ	‡0Ω	
V 25	1B3GT	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	Inf.	TOP CAP ‡450Ω
V 26	5U4G	Inf.	7KΩ	Inf.	800Ω	Inf.	800Ω	Inf.	7KΩ	
V 27	5U4G	Inf.	7KΩ	Inf.	800Ω	Inf.	800Ω	Inf.	7KΩ	
V 28	7Q7	0Ω	▲6KΩ	▲6KΩ	22KΩ	0Ω	2.5Meg.	1Ω	.2Ω	
V 29	7A7	0Ω	▲6KΩ	▲6KΩ	0Ω	0Ω	2.2Meg.	0Ω	.2Ω	
V30A	7C6	.2Ω	▲2.6Meg.	3.5Meg.	0Ω	180KΩ	180KΩ	0Ω	0Ω	
V31A	7C5	0Ω	▲800Ω	▲2KΩ	▲500KΩ	32Ω	470KΩ	330Ω	.2Ω	
V32	7Z4	.2Ω	Inf.	200Ω	Inf.	Inf.	200Ω	140KΩ	0Ω	
V33	10BP4	0Ω	*6KΩ	PIN 10 ▲100KΩ	PIN 11 26KΩ	PIN 12 .2Ω				

* Measured from pin 2 of V27
† Measured from pin 7 of V22
‡ Measured from pin 8 of V24
▲ Measured from pin 7 of V32

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.


AUDIO OUTPUT
7C5
DET.-A.V.C.-A.F. AMP.
7C6
AM I.F. AMP.
7A7
AM CONVERTER
7Q7
RECTIFIER
724
VOLUME CONTROL
TONE CONTROL
ON-OFF SWITCH ON TONE CONTROL
F/L
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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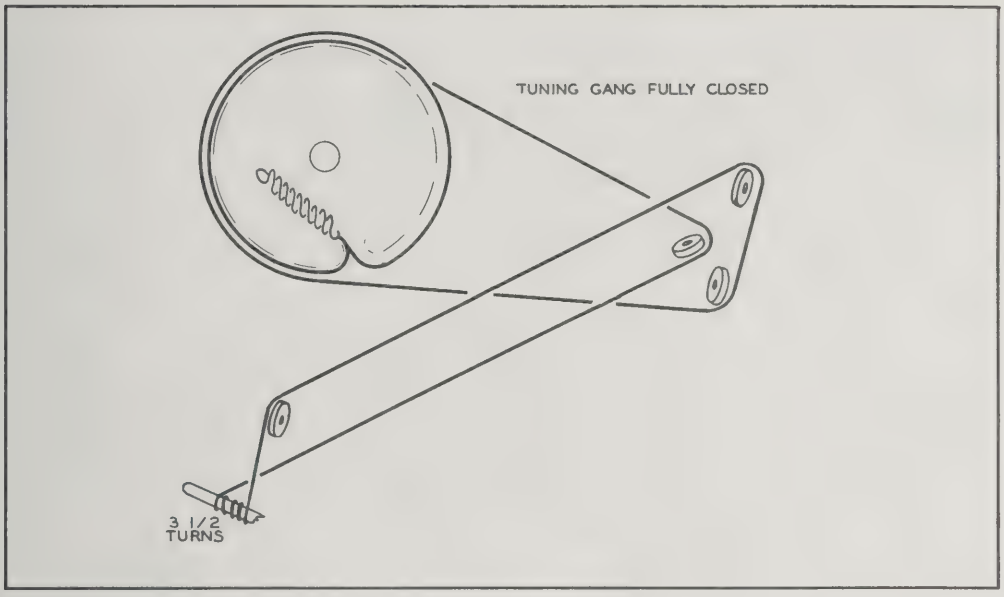
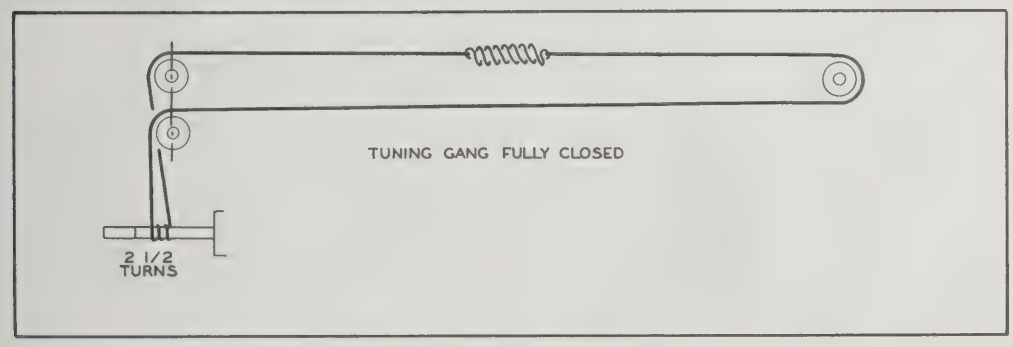
DIAL CORD STRINGING

RADIO



TV



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TEMPLE
MODELS TV-1776, TV-1777, TV-1778, TV-1779

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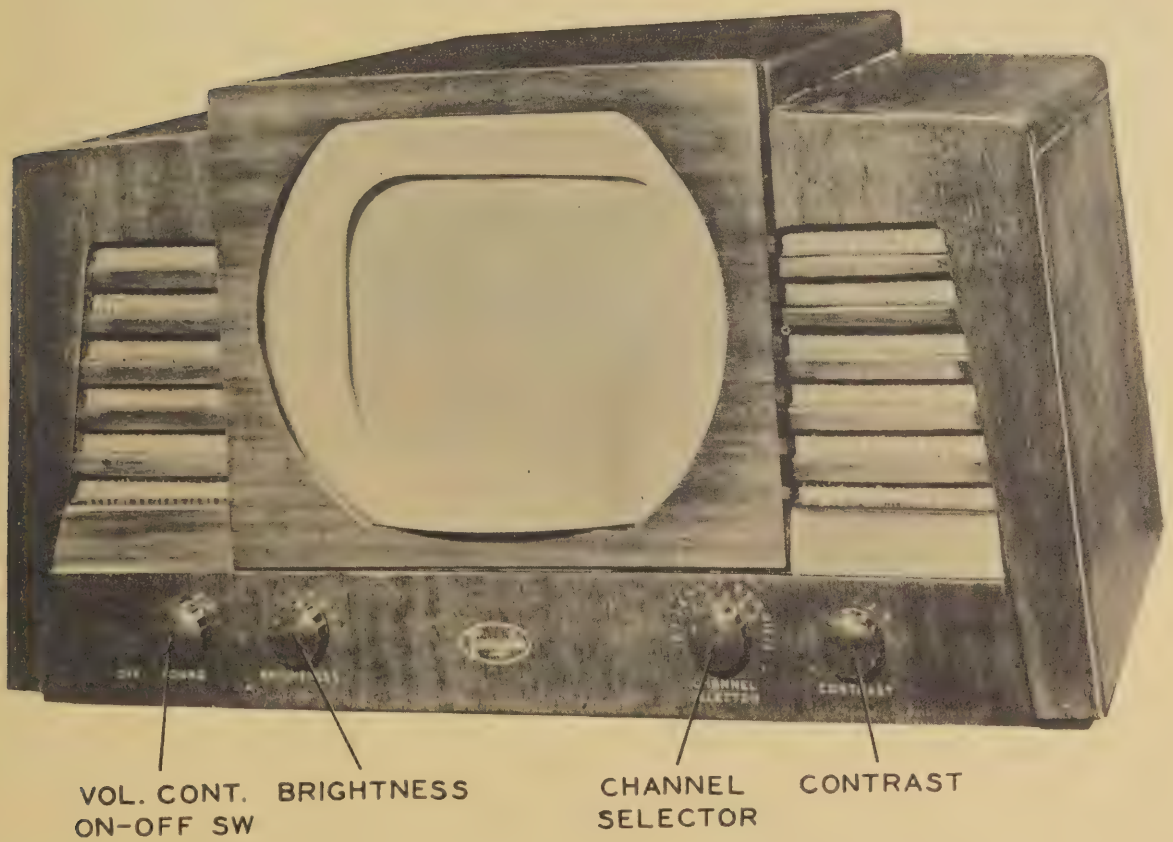

Model TV-1776

TEMPLE
MODELS TV-1776, TV-1777, TV-1778, TV-1779

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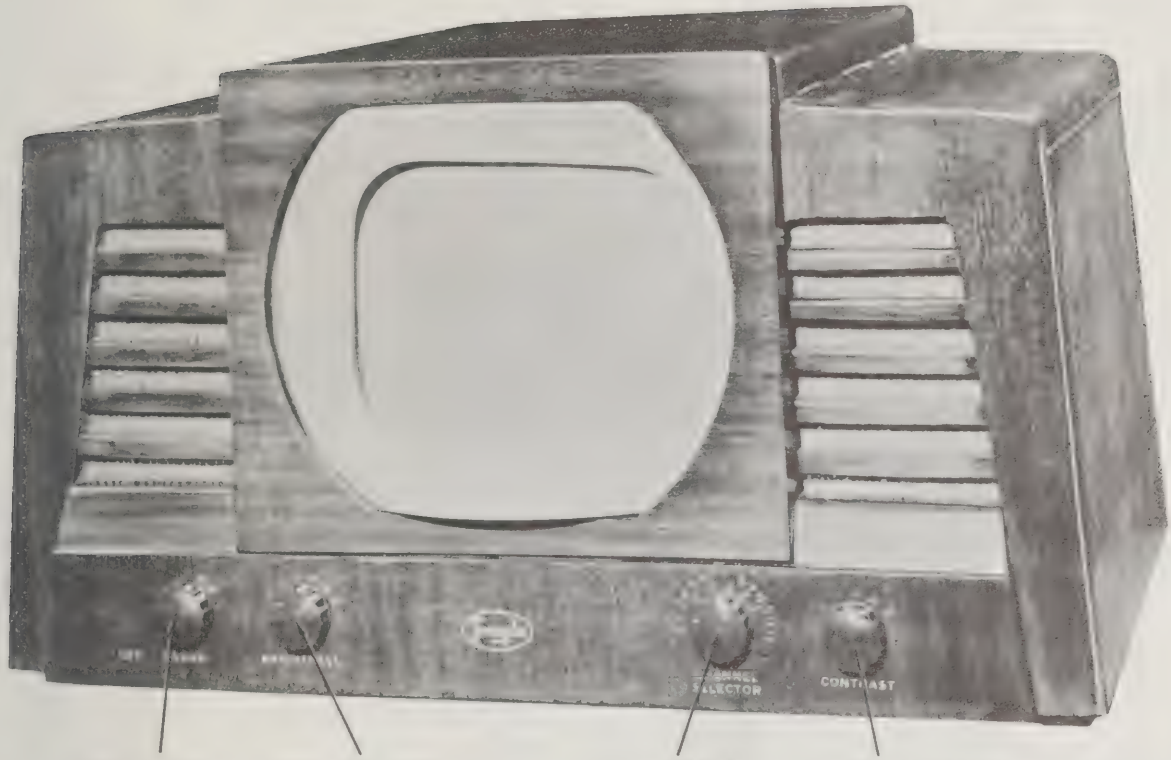

VOL. CONT. ON-OFF SW — BRIGHTNESS — CHANNEL SELECTOR — CONTRAST

TEMPLE MODELS TV-1776, TV-1777, TV-1778, TV-1779

TEMPLE MODEL TV-1776

TRADE NAME	Temple Models, TV-1776, TV-1777, TV-1778, TV-1779
MANUFACTURER	Templetone Radio Mfg. Corp., Garfield Ave., New London, Conn.
TYPE SET	Television Receiver
TUBES	Seventeen

POWER SUPPLY 105-120 Volts, 50-60 Cycles AC RATING 1.0 Amp. @ 117 Volts
TUNING RANGE—Channels 2 through 13

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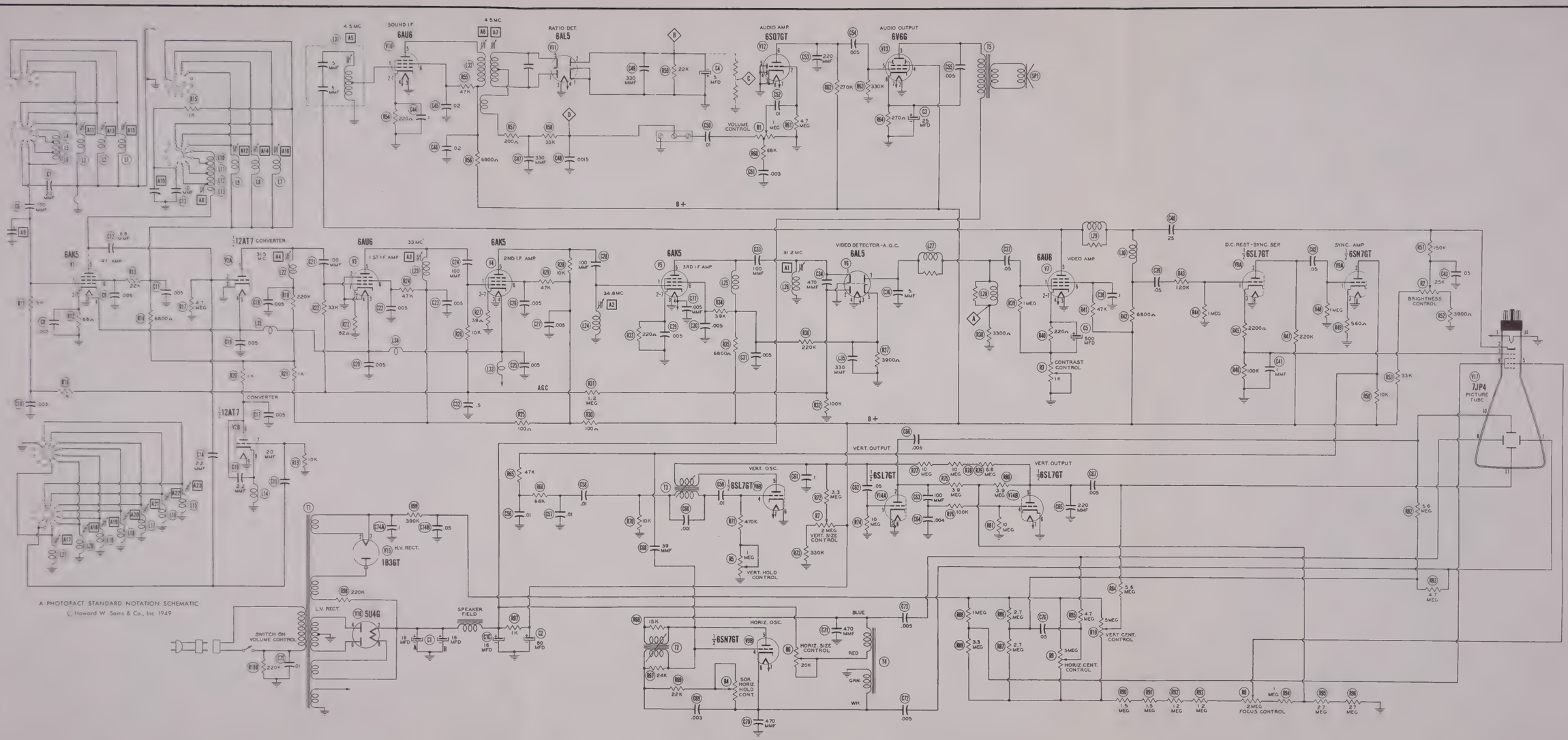
DATE 7/49 4914-16 SET #66 FOLDER 16



A PHOTOFACT STANDARD NOTATION SCHEMATIC

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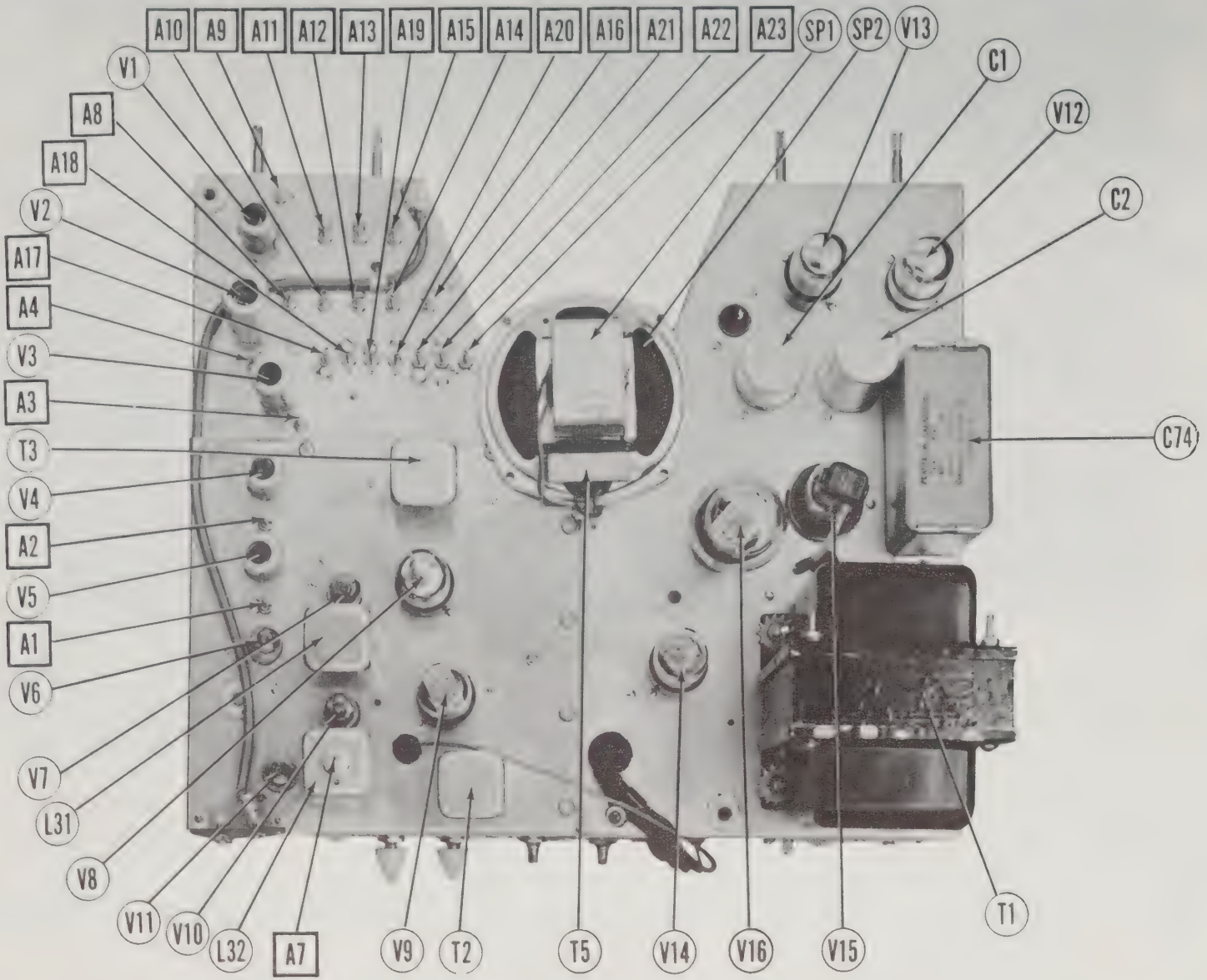
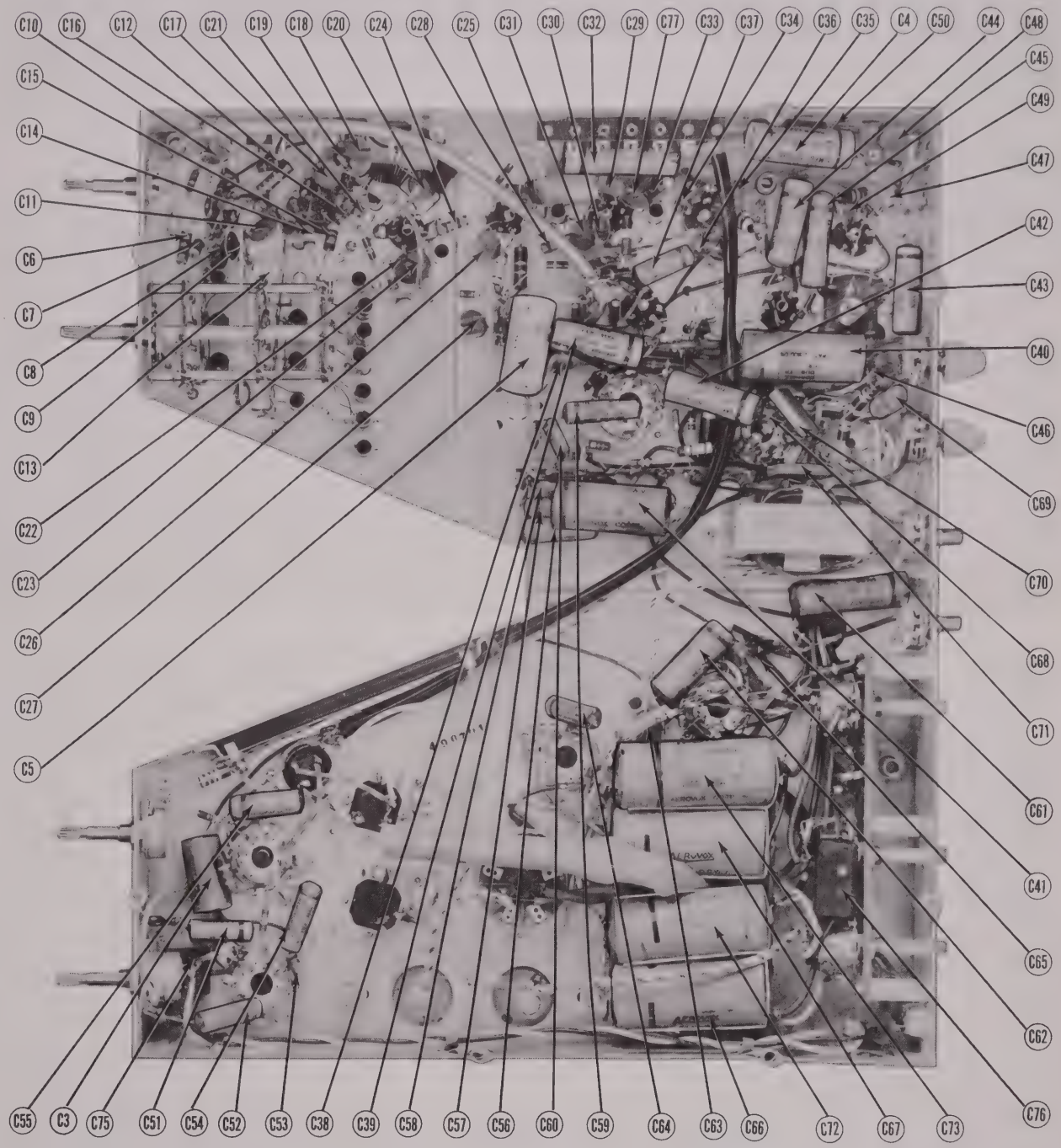
TEMPLE
MODELS TV-1776, TV-1777,
TV-1778, TV-1779



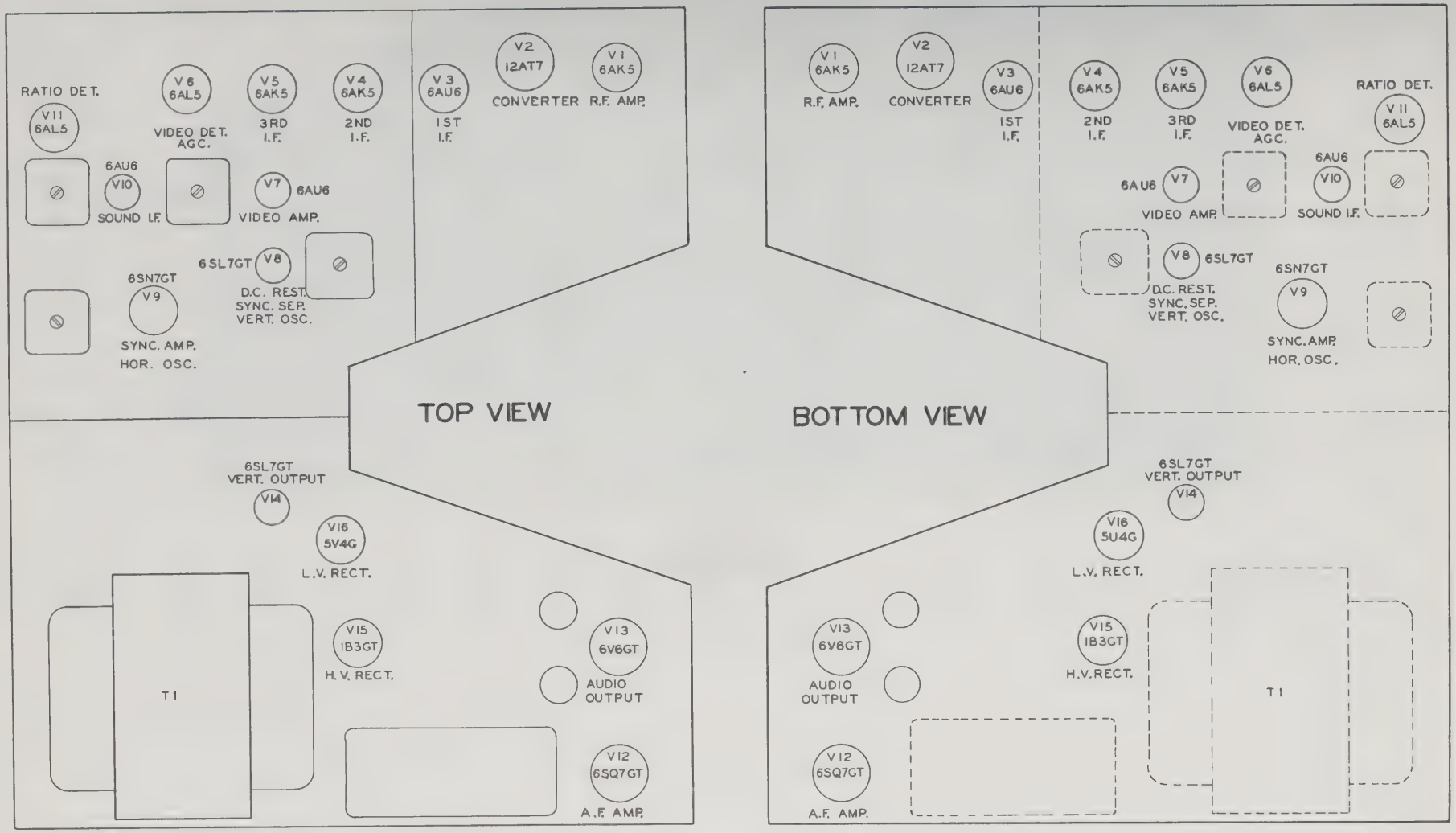
CHASSIS TOP VIEW

TEMPLE



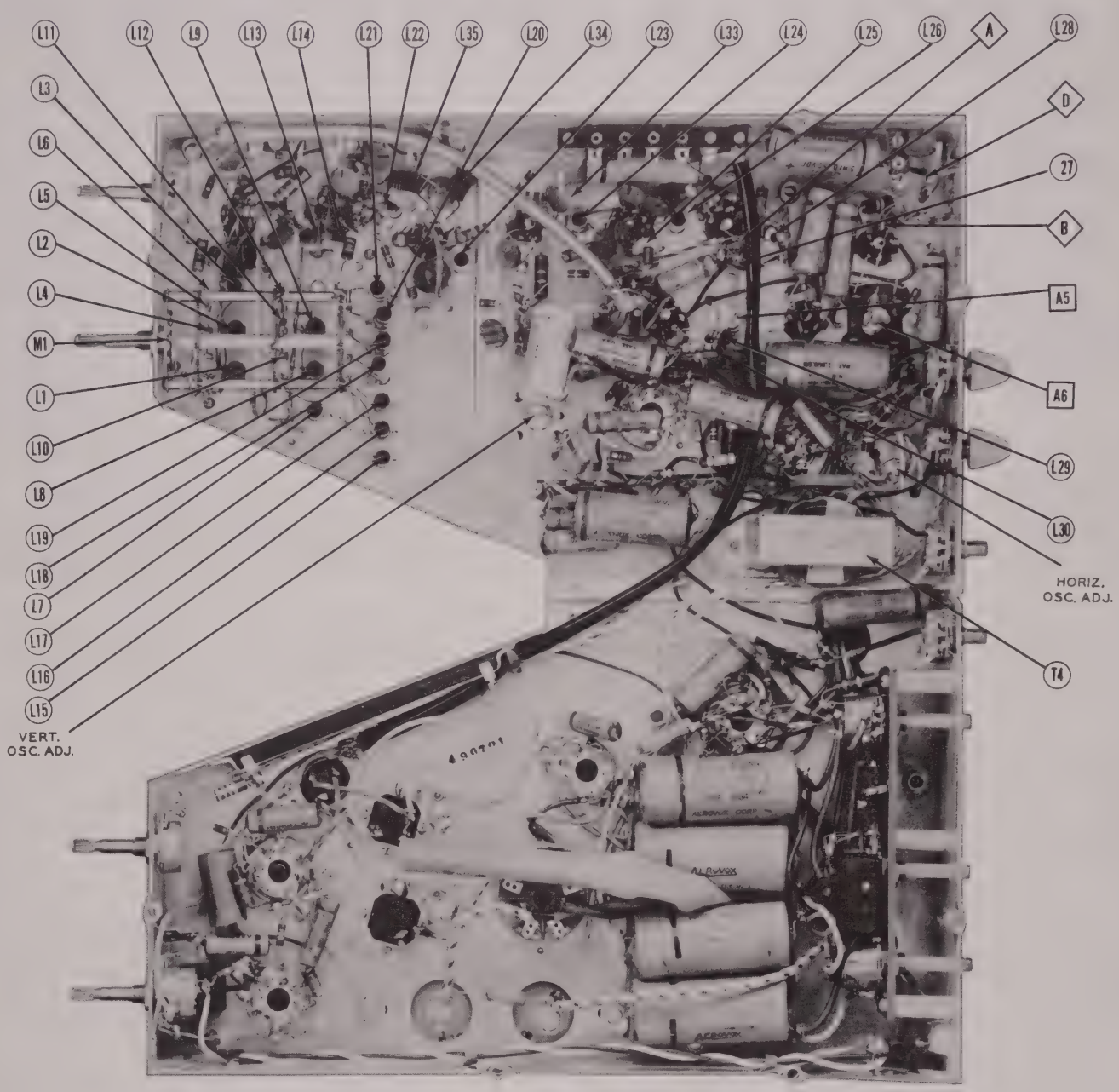
CHASSIS BOTTOM VIEW-TRANS., INDUCTOR AND ALIGNMENT IDENTIFICATION

TEMPLE
MODELS TV-1776, TV-1777,
TV-1778, TV-1779



TUBE PLACEMENT CHART

TEMPLE
MODELS TV-1776, TV-1777,
TV-1778, TV-1779



CHASSIS BOTTOM VIEW-CAPACITOR IDENTIFICATION

VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	-.6VDC	.6VDC	0V	6.4VAC	210VDC	108VDC	.6VDC		
V 2	12AT7	38VDC	-3.5VDC	0V	6.4VAC	6.4VAC	235VDC	§-4.6VDC	0V	0V
V 3	6AU6	-.6VDC	0V	6.4VAC	0V	235VDC	140VDC	.6VDC		
V 4	6AK5	-.6VDC	.4VDC	0V	6.4VAC	155VDC	105VDC	.4VDC		
V 5	6AK5	0V	1.9VDC	0V	6.4VAC	180VDC	105VDC	1.9VDC		
V 6	6AL5	0V	-.1VDC	6.4VAC	0V	2.8VDC	0V	-1.3VDC		
V 7	6AU6	.5VDC	7.7VDC	0V	6.4VAC	208VDC	145VDC	7.7VDC		
V 8	6SL7GT	0V	225VDC	3.8VDC	-.6VDC -.8VDC	1VDC 50VDC	0V	6.4VAC	0V	
V 9	6SN7GT	0V	160VDC	4.2VDC	-40VDC -55VDC	182VDC 320VDC	4VDC	6.4VAC	0V	
V 10	6AU6	0V	1.4VDC	0V	6.4VAC	200VDC	125VDC	1.4VDC		
V 11	6AL5	0V	-.6VDC	0V	6.4VAC	-.3VDC	0V	-.3VDC		
V 12	6SQ7GT	0V	-.5VDC	0V	0V	0V	100VDC	6.4VAC	0V	
V 13	6V6GT	0V	0V	310VDC	235VDC	0V	0V	6.4VAC	10.5VDC	
V 14	6SL7GT	-1VDC	200VDC	0V	-.5VDC	200VDC	0V	6.4VAC	0V	
V 15	1B3GT	† DO NOT MEASURE								
V 16	5U4G	0V	320VDC	0V	300VAC	0V	300VAC	0V	320VDC	

PINS		1	2	3	4	5	6	7	8	9	10	11	12	13	14
V17	7JP4	6.4VAC	110VDC	3.6VDC	0V	†	0V	†	†	†	†	†	0V	0V	0V

§ Taken with vacuum tube voltmeter.
† Do not measure. Cannot make accurate measurement due to high impedance of circuit.

RESISTANCE READINGS

Item	Tube	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9
V 1	6AK5	1.3 Meg.	68Ω	0Ω	.2Ω	*9KΩ	*30KΩ	68Ω		
V 2	12AT7	*220KΩ	4.7 Meg.	0Ω	.2Ω	.2Ω	*3.5KΩ	10KΩ	.1Ω	0Ω
V 3	6AU6	1.3 Meg.	0Ω	.2Ω	0Ω	*1200Ω	*47KΩ	82Ω		
V 4	6AK5	1.3 Meg.	39Ω	0Ω	.2Ω	*11KΩ	*47KΩ	39Ω		
V 5	6AK5	.2Ω	220Ω	0Ω	.2Ω	*7.5KΩ	*40KΩ	220Ω		
V 6	6AL5	.2Ω	100KΩ	.2Ω	0Ω	3.9KΩ	0Ω	3.3KΩ		
V 7	6AU6	1 Meg.	1200Ω	0Ω	.2Ω	*8KΩ	*50KΩ	1200Ω		
V 8	6SL7GT	1 Meg.	*220KΩ	100KΩ	1.5 Meg 440KΩ	*3.5Meg. *3 Meg.	0Ω	.2Ω	0Ω	
V 9	6SN7GT	1 Meg.	*12KΩ	560Ω	70KΩ 22KΩ	*19KΩ *400Ω	260Ω	.2Ω	0Ω	
V 10	6AU6	2Ω	220Ω	0Ω	.2Ω	*7.5KΩ	*53KΩ	220Ω		
V 11	6AL5	0Ω	22KΩ	0Ω	.2Ω	Inf.	0Ω	Inf.		
V 12	6SQ7GT	0Ω	4.7 Meg.	0Ω	0Ω	0Ω	*270KΩ	.2Ω	0Ω	
V 13	6V6GT	0Ω	0Ω	*520Ω	*1000Ω	330KΩ	Inf.	.2Ω	270Ω	
V 14	6SL7GT	10 Meg.	7 Meg.	0Ω	10 Meg.	1 Meg.	0Ω	.2Ω	0Ω	
V 15	1B3GT	Inf.	14 Meg.	Inf.	Inf.	Inf.	Inf.	14 Meg.	Inf.	TOP CAP *220KΩ
V 16	5U4G	Inf.	50KΩ	Inf.	60Ω	Inf.	60Ω	Inf.	50KΩ	

PINS		1	2	3	4	5	6	7	8	9	10	11	12	13	14
V17	7JP4	.2Ω	*150KΩ	100KΩ	Inf.	5.7Meg.	Inf.	19Meg.	18Meg.	14Meg.	20Meg.	20Meg.	Inf.	Inf.	0Ω

* Measured from pin 2 of V16.

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.

ALIGNMENT INSTRUCTIONS

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

This receiver uses a "brute force" type high voltage power supply and extreme caution should be exercised when working beneath the chassis.

VIDEO IF ALIGNMENT

The signal may be injected into the video IF channel by means of several turns of hookup wire wrapped around the 12AT7 mixer tube (V2).

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
1.		High side to several turns of wire wrapped around mixer tube 12AT7 (V2). Low side to chassis.	31.2MC	Any	DC Probe to Point (A) Common to chassis.	A1	Adjust for maximum deflection.
2.		"	34.8MC	"	"	A2	" " " "
3.		"	33.0MC	"	"	A3	" " " "
4.		"	31.5MC	"	"	A4	" " " "

OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal amplifier of the oscilloscope for horizontal deflection.

	DUMMY ANTENNA	SWEEP GENERATOR COUPLING	SWEEP GENERATOR FREQUENCY	MARKER GENERATOR FREQUENCY	CHANNEL	CONNECT SCOPE	ADJUST	REMARKS
5.		High side to several turns of wire wrapped around mixer tube (V2). Low side to chassis	33MC (10MC Sweep)	30.0MC 31.5MC 33.0MC 34.5MC 36.0MC	Any	Vert. Amp. to Point (A) Low side to chassis.		If necessary, slightly retouch A1, A2, A3 and A4 so markers are correctly placed on pattern as per Fig 1.

SOUND IF ALIGNMENT

Connect two matched 100KΩ (± 5%) resistors in series from pin 2 of the 6AL5 ratio detector tube (V11) to chassis. The junction of these two resistors is alignment point C as shown on the schematic.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
6.	.05MFD	High side to pin 1 (Grid) of 6AU6 (V7). Low side to chassis	4.5MC (Very Accurately)	Any	DC Probe to Point (B) Common to chassis.	A5, A6	Adjust for maximum deflection.
7.	.05MFD	"	"	"	DC Probe to Point (B) Common to Point (C)	A7	Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. After receiver has been fully aligned tune in a TV station sound carrier and adjust A7 for minimum hum, if necessary.

ANTENNA & RF AMP. ALIGNMENT

In those localities where channels 7 or 11 are not used, adjust A8, A9, and A10 for maximum on the nearest useable channel.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
8.	Direct	Across antenna terminals. High side to "A". Low side to "G".	199.25MC	11	DC Probe to Point (A) Common to chassis.	A8	Adjust for maximum deflection.
9.	Direct	"	179.75MC	7	"	A9	" " " "
10.	Direct	"	175.25MC	7	"	A10	" " " "
11A	Direct	"	87.75MC	6	"	A11	" " " "
B	Direct	"	81.75MC	5	"	A11	" " " "
12A	Direct	"	83.25MC	6	"	A12	" " " "
B	Direct	"	77.25MC	5	"	A12	" " " "
13A	Direct	"	71.75MC	4	"	A13	" " " "
B	Direct	"	65.75MC	3	"	A13	" " " "
14A	Direct	"	67.25MC	4	"	A14	" " " "
B	Direct	"	61.25MC	3	"	A14	" " " "
15A	Direct	"	65.75MC	3	"	A15	" " " "
B	Direct	"	59.75MC	2	"	A15	" " " "
16A	Direct	"	61.25MC	3	"	A16	" " " "
B	Direct	"	55.25MC	2	"	A16	" " " "

OSCILLATOR ALIGNMENT

When adjusting the oscillator settings, it must be borne in mind to set the oscillator circuits to the same channels as the antenna and RF amplifier circuits were aligned.

The oscillator operates 33MC above the sound carrier on the low band channels and 33MC below the sound carrier on the high band channels.

	DUMMY ANTENNA	SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	CHANNEL	CONNECT VTVM	ADJUST	REMARKS
17A	Direct	Across antenna terminals. High side to "A". Low side to "G".	182.75MC	13		A17	Adjust for rough audio beat in speaker. Volume control and signal generator set at maximum.
B	Direct	"	176.75MC	12		A17	"
18A	Direct	"	170.75MC	11		A18	"
B	Direct	"	164.75MC	10		A18	"
19A	Direct	"	158.75MC	9		A19	"
B	Direct	"	152.75MC	8		A19	"
20	Direct	"	146.75MC	7		A20	"
21A	Direct	"	120.75MC	6		A21	"
B	Direct	"	114.75MC	5		A21	"
22A	Direct	"	104.75MC	4		A22	"
B	Direct	"	98.75MC	3		A22	"
23A	Direct	"	98.75MC	3		A23	"
B	Direct	"	92.75MC	2		A23	"

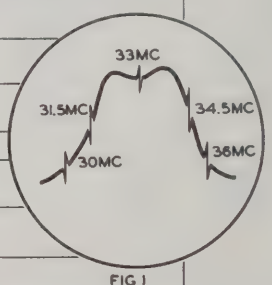
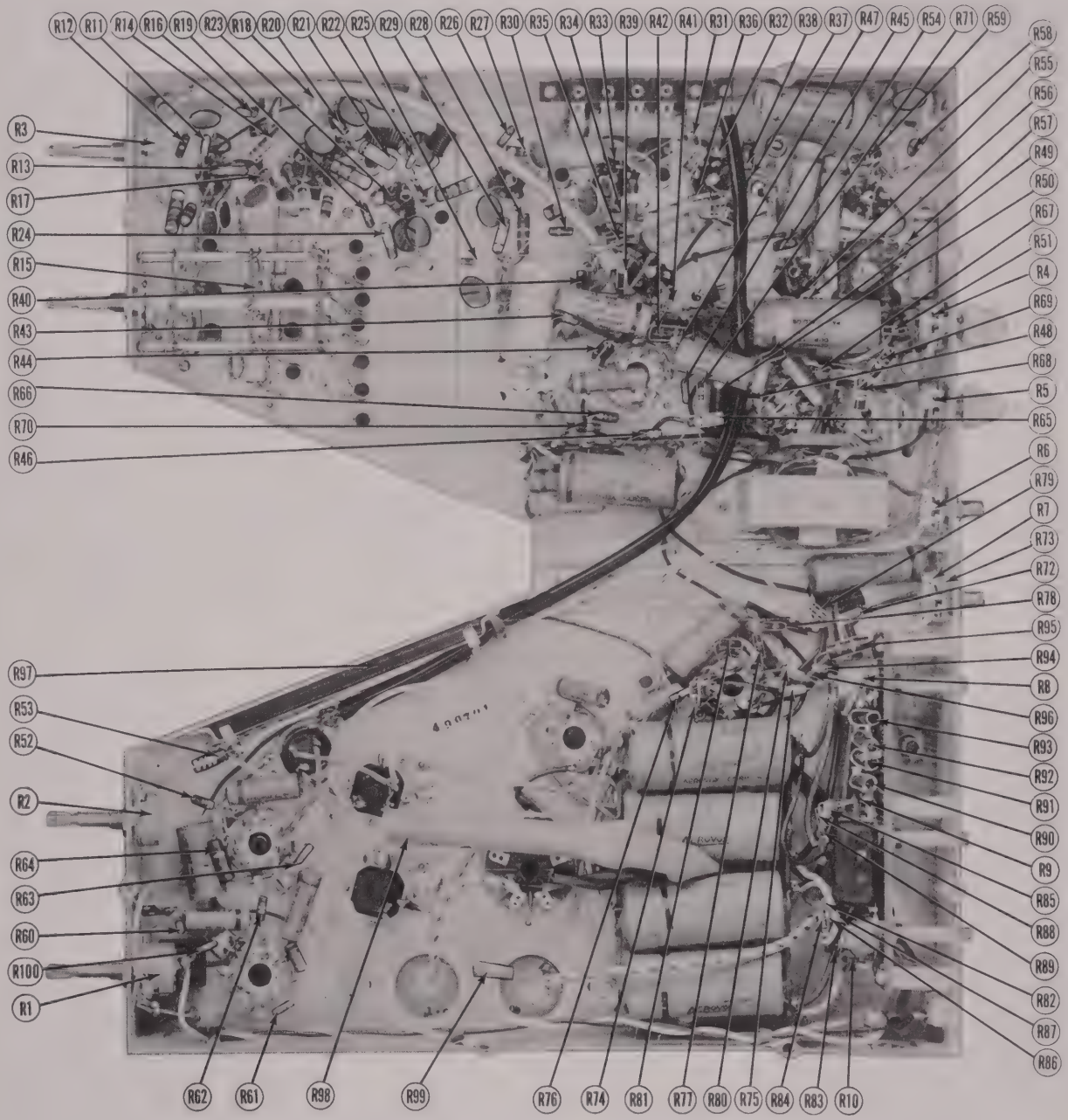


FIG 1



CHASSIS BOTTOM VIEW-RESISTOR IDENTIFICATION

TEMPLE

MODELS TV-1776, TV-1777,
TV-1778, TV-1779

PARTS LIST AND DESCRIPTIONS

TUBES (SYLVANIA or Equivalent)

ITEM No.	USE	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANDARD REPLACEMENT	RMA BASE TYPE	NOTES
V1	RF Amp.	6AK5	6AK5	7BD	
V2	Converter	12AT7	12AT7		
V3	1st IF Amp.	6AU6	6AU6	7BK	
V4	2nd IF Amp.	6AK5	6AK5	7BD	
V5	3rd IF Amp.	6AK5	6AK5	7BD	
V6	Video 2ET-AGC	6AL5	6AL5	6BT	
V7	Video Amp.	6AU6	6AU6	7BK	
V8	DC Rest.-Sync. Sep.-Vert. Osc.	6SL7GT	6SL7GT	8BD	
V9	Horiz. Amp.	6SN7GT	6SN7GT	9BD	
V10	Sound IF	6AU6	6AU6	7BK	
V11	Audio Det.	6AL5	6AL5	6BT	
V12	Audio Amp.	6SL7GT	6SQ7GT	8Q	
V13	Audio Output	6V6GT	6V6GT	7AC	
V14	Vert. Output	6SL7GT	6SL7GT	8BD	
V15	HV Rect.	1B3GT	1B3GT	3C	
V16	Ex. Rect.	5U4G	5U4G	5T	
V17	CR Tube	7JP4	7JP4		

CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C1A	16	450	B-CE1-2A86	AF444J	UP2224			D12791	Filter
B	16	450	Alternate		50*				"
C	16	450	CE1-3A85						"
C2	80	450	B-CE1-1A88	AF16J	UP8045			TVL-9	"
C3	25	25	A-CE88	PR85A	BR550			TVA-c	Output Plate Bypass
C4	5	50	A-CE88	PRS150/4	BR550			TVA-13	Stabilizing Cap.
C5	500	3	A-CE92	PRS6/500	BRH605			UHC-506	Video Amp. Cath. Byp.
C6	100					GP1K-100			RF Coupling
C7	20					NP0K-20			Fixed Trimmer
C8	5000					GP2M-005			RF Cath. Bypass
C9	5000					GP2M-005			RF Screen Bypass
C10	5000					GP2M-005			AGC Filter
C11	5000					GP2M-005			RF Decoupling
C12	5000								RF Coupling
C13	10					NT5J-10			Fixed Trimmer
C14	100								Osc. Coupling
C15	20					NP0K-20			Osc. Grid Cap.
C16	2.2								Osc. Feedback
C17	5000					GP2M-005			Osc. Plate Bypass
C18	5000					GP2M-005			Mixer Plate Decoup.
C19	5000					GP2M-005			Filament Bypass
C20	5000					GP2M-005			"
C21	100			1468-0001	5W5T1	GP1K-100	M0.5-31	LFM-31	IF Coupling
C22	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	1st V. IF Screen Byp.
C23	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	Decoupling
C24	100			1468-0001	5W5T1	GP1K-100	M0.5-31	LFM-31	IF Coupling
C25	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	Filament Bypass
C26	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	2nd V. IF Screen Byp.
C27	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	2nd V. IF Decoupling
C28	100			1468-0001	5W5T1	GP1K-100	M0.5-31	LFM-31	IF Coupling
C29	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	3rd V. IF Cath. Byp.
C30	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	3rd V. IF Screen Byp.
C31	5000			1467-005	1D5D5	GP2M-005	MW.5-25	LFM-25	3rd V. IF Decoupling
C32	.5	50		P288-5	GT2P5		ST-2-5	68P20	AGC Filter
C33	100			1468-0001	5W5T1	GP1K-100	M0.5-31	LFM-31	IF Coupling
C34	470			1468-0005	5W5T5	GP2K-500	M0.5-35	LFM-35	"
C35	330			1468-00035	5W5T3	GP2K-300	M0.5-33	LFM-33	AGC Diode Filter
C36	5			1469-000005	5R5V5	NP0K-5	MO8.5-55	MS-55	Diode Filter
C37	.05	200		P288-05	3T2S5		ST-4-05	TM-15	Video Coupling
C38	.1	400		P488-1	GT4P1		ST-4-1	TM-1	V. Amp. Screen Bypass
C39	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Video Coupling
C40	.25	600		684-25	GT6P25		ST-6-25	TC-2	"
C41	1.0	50		484-1.0	GT2W1		ST-2-1M	TC-10	DC Res. Cath. Bypass
C42	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Sync. Coupling
C43	.05	400		P488-C5	GT4S5		ST-4-05	TM-15	Pic. Tube Cath. Decoup
C44	.1	200		P288-1	GT2P1		ST-2-1	TM-1	S. IF Cath. Bypass
C45	.02	600		P688-02	GT6S2		ST-6-02	TM-12	S. IF Screen Bypass
C46	.02	600		P688-02	GT6S2		ST-6-02	TM-12	S. IF Decoupling
C47	330			1468-0003	5W5T3	GP2K-300	M0.5-33	LFM-33	Diode Load Cap.
C48	1500			1467-0015	1W5D15	GP2L-0015	MW.5-215	LFM-215	De-emphasis
C49	330			1468-0003	5W5T3	GP2K-300	M0.5-33	LFM-33	RF Bypass
C50	.01	400		P488-01	GT4S1	GP4K-335-01	ST-4-01	TM-11	Audio Coupling
C51	.003	600		P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Tone Comp.
C52	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Audio Coupling
C53	225			1469-00025	5W5T25	GP2K-250	MO.5-325	LFM-325	AF Plate Bypass
C54	.005	600		P688-005	3T6S5	GP2M-005	ST-6-005	TM-25	Audio Coupling
C55	.005	1000		P1068-005	3T10D5		STM-16-005	MS-25	Output Plate Bypass
C56	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Integrator Net.
C57	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	"
C58	.01	600		P688-01	GT6S1	GP2-335-01	ST-6-01	TM-11	Vert. Sync. Coupling
C59	.01	400		P488-01	GT4S1	GP2-335-01	ST-4-01	TM-11	Vert. Osc. Grid Cap.
C60	.001	500		1464-001	2R5D1	GP2M-005	MW5.5-21	MS-21	Fixed Trimmer
C61	.1	600		P688-1	GT6P1		ST-6-1	TM-1	Vert. Discharge
C62	.05	600		P688-05	3T6S5		ST-6-05	TM-15	Vert. Coupling
C63	.160	450							"
C64	.064	150		P688-004	3T6D4		ST-6-004	TM-24	Voltage Divider
C65	.22	1200							Vert. Output Plate Byp
C66	.005	6000		7584-005	DSTH-60D5		STM-60-005	TVM-256	Vert. Coupling
C67	.005	6000		7584-005	DSTH-60D5		STM-60-005	TVM-256	" "

CAPACITORS (CONT.)

ITEM No.	RATING: CAP.	RATING: VOLT	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: AEROVOX PART No.	REPLACEMENT DATA: CORNELL-DUBILIER PART No.	REPLACEMENT DATA: ERIE PART No.	REPLACEMENT DATA: SOLAR PART No.	REPLACEMENT DATA: SPRAGUE PART No.	IDENTIFICATION CODES AND INSTALLATION NOTES
C68	39			1468-00004	5W5J4		M0.5-44	1FM-44	Hor. Sync. Coupling
C69	.003	600		P688-003	GT6D3	GP2M-003	ST-6-003	TM-23	Hor. Osc. Grid Cap.
C70	470	1000							Fixed Trimmer
C71	470	1000							Fixed Trimmer
C72	.005	6000		7584-005	DSTH-60D5		STM-60-005	TVM-256	Hor. Coupling
C73	.005	6000		7584-005	DSTH-60D5		STM-60-005	TVM-256	Hor. Coupling
C74A	.1	6000	B-C03		MDD60S5-.1			TVQ-156 †	HV Filter
B	.05	6000			MDD60S5			TVQ-156	HV Filter
C75	.01	600		P688-01	GT6S1		ST-6-01	TM-11	Line Filter
C76	.05	600		P688-05	GT6S5		ST-6-05	TM-15	Hor. Cent. Cont. Byp.
C77	5000			1467-005	1D5D5	GP2M-005	MW.5-25	1FM-25	Filament Bypass

* Omit bypass section.
† Rated .05/6000—use 2 in parallel.

CONTROLS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: IRC PART No.	REPLACEMENT DATA: CLAROSTAT PART No.	INSTALLATION NOTES
R1A	1 Meg.	‡	RP20-105	Q13-137X	AT-98	Volume control tapped @ 300KΩ
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R1A per instructions
C	Switch		Not Req.	76-1	SW-A	" " " "
R2A	25KΩ	‡	RP21-253	Q11-120	AM-40-S	Brightness control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R2A per instructions
R3A	100KΩ	‡	RP21-103	Q11-108	AM-8-S	Contrast control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R3A per instructions
R4A	50KΩ	‡	RP24-503	Q11-123	AM-44-S	Horiz. hold control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R4A per instructions
R5A	1 Meg.	‡	RP24-105	Q11-137	AM-61-S	Vert. hold control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R5A per instructions
R6A	20KΩ	‡	RP23-203	Q11-120	AM-36-S	Horiz. size control
B	Shaft		Not Req.	Not Req.	KSS-3	Attach to R6A per instructions
R7A	2 Meg.	‡	RP23-205	Q11-139	M-63-S	Vert. size control
B	Shaft		Not Req.	SQ	Not Req.	Attach to R7A per instructions
R8	2 Meg.	‡	RP22-205			Focus control
R9A	5 Meg.	‡	RP22-505	Q11-141		Horiz. centering control
B	Shaft		Not Req.	C3#		Attach to R9A per instructions
R10A	5 Meg.	‡	RP22-505	Q11-141		Vert. centering control
B	Shaft		Not Req.	C3#		Attach to R10A per instructions

‡ Use an extra nut as a spacer to hold control back from control sub-panel as far as possible. Then saw off shaft of new control so that C3 coupler can be employed to connect part of original shaft, (Insulated shaft) to the new control. (Caution be sure that the C3 coupler has plenty of clearance between itself and chassis).

RESISTORS

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED.
R11	15KΩ	‡		BTS-15K	RF Grid
R12	68Ω	‡			RF Cathode
R13	22KΩ	1			RF Screen
R14	6800Ω	‡			RF Decoupling
R15	1000Ω	‡		BTS-1000	RF Plate Decoupling
R16	1000Ω	‡		BTS-1000	AGC Network
R17	4.7 Meg.	‡		BTS-4.7 Meg.	Converter Grid
R18	220KΩ	‡		BTS-220K	Converter Plate Decoupling
R19	10KΩ	‡			Osc. Grid 20%
R20	1000Ω	‡		BTS-1000	Osc. Plate Decoupling
R21	1000Ω	1		BTA-1000	Decoupling
R22	33KΩ	‡		BTS-33K	1st IF Grid 20%
R23	82Ω	‡			1st IF Cathode
R24	47KΩ	‡		BTA-47K	1st IF Screen
R25	100Ω	‡			1st IF Decoupling
R26	10KΩ	‡			2nd IF Grid
R27	39Ω	‡			2nd IF Cathode
R28	10KΩ	1			2nd IF Plate
R29	47KΩ	‡		BTA-47K	2nd IF Screen
R30	100Ω	‡			2nd IF Decoupling
R31	1.2 Meg.	‡		BTS-1.2 Meg.	AGC Network
R32	100KΩ	‡		BTS-100K	" "
R33	220Ω	‡			3rd IF Cathode
R34	39KΩ	‡		BTS-39K	3rd IF Screen
R35	6800Ω	1		BTA-6800	3rd IF Decoupling
R36	220KΩ	‡		BTS-220K	Voltage Divider
R37	39000Ω	‡		BTS-3900-5%	" " 5%
R38	3300Ω	‡		BTS-3300	Video Det. Load
R39	1 Meg.	‡		BTS-1 Meg.	Video Amp. Grid
R40	220Ω	‡			Video Amp. Cathode
R41	47KΩ	‡		BTA-47K	Video Amp. Screen
R42	6800Ω	1		BTA-6800	Video Amp. Plate
R43	120KΩ	‡		BTS-120K	Phase Correction
R44	1 Meg.	‡		BTS-1 Meg.	Sync. Sep. Grid
R45	2200Ω	‡		BTS-2200	Sync. Sep. Cathode
R46	100KΩ	‡		BTS-100K	Sync. Sep. Cathode
R47	220KΩ	‡		BTS-220K	Sync. Sep. Plate
R48	1 Meg.	‡		BTS-1 Meg.	Sync. Amp. Grid
R49	560Ω	‡		BTS-560	Sync. Amp. Cathode
R50	10KΩ	2		BT-2-10K	Sync. Amp. Plate
R51	150KΩ	‡		BTS-150K	Picture Tube Cathode
R52	39000Ω	‡		BTS-3900-5%	Voltage Divider 5%
R53	33KΩ	1		BTA-33K	" "

RESISTORS (CONT.)

ITEM No.	RATING: RESISTANCE	RATING: WATTS	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: IRC PART No.	IDENTIFICATION CODES
R54	220Ω	‡			Sound IF Cathode
R55	47KΩ	‡		BTA-47K	Sound IF Screen
R56	6800Ω	1		BTA-6800	Sound IF Decoupling
R57	200Ω	‡			Balancing
R58	33KΩ	‡		BTS-33K	De-emphasis
R59	22KΩ	1		BTA-22K	Ratio Det. Diode Load
R60	68KΩ	‡		BTS-68K	Tone Compensation
R61	4.7 Meg.	‡		BTS-4.7 Meg.	AF Grid
R62	270KΩ	‡		BTS-270K	AF Plate
R63	330KΩ	‡		BTS-330K	Output Grid
R64	270Ω	1		BW-1-270	Output Cathode
R65	47KΩ	‡		BTS-47K	Differentiator
R66	68KΩ	‡		BTS-68K	"
R67	24KΩ	‡			Horiz. Osc. Coil Shunt
R68	15KΩ	1		BTA-15K	Horiz. Osc. Coil Shunt
R69	22KΩ	1		BTA-22K	Horiz. Osc. Grid
R70	10KΩ	‡		BTS-10K	Differentiator
R71	470KΩ	‡		BTS-470K	Vert. Osc. Grid
R72	3.3 Meg.	‡		BTS-3.3 Meg.	Vert. Osc. Plate
R73	330KΩ	‡		BTS-330K	Voltage Divider
R74	10 Meg.	‡		BTS-10 Meg.	Vert. Output Grid
R75	3.0 Meg.	‡		BTS-3.9 Meg.	Vert. Output Plate
R76	100KΩ	‡		BTS-100K	Vert. Output Grid
R77	10 Meg.	‡		BTS-10 Meg.	Feedback Network
R78	10 Meg.	‡		BTS-10 Meg.	" "
R79	6.8 Meg.	‡		BTS-6.8 Meg.	" "
R80	3.9 Meg.	‡		BTS-3.9 Meg.	Vert. Output Plate
R81	10 Meg.	‡		BTS-10 Meg.	Vert. Output Grid
R82	5.6 Meg.	‡		BTS-5.6 Meg.	Vert. Deflection Load
R83	4.7 Meg.	‡		BTA-4.7 Meg.	Horiz. Deflection Load
R84	5.6 Meg.	‡		BTA-5.6 Meg.	Vert. Deflection Load
R85	4.7 Meg.	‡		BTA-4.7 Meg.	Horiz. Deflection Load
R86	2.7 Meg.	‡		BTA-2.7 Meg.	Voltage Divider
R87	2.7 Meg.	‡		BTA-2.7 Meg.	" "
R88	1 Meg.	‡		BTA-1 Meg.	" "
R89	3.3 Meg.	‡		BTA-3.3 Meg.	" "
R90	1.5 Meg.	1			Voltage Divider
R91	1.5 Meg.	1			" "
R92	1.2 Meg.	1			" "
R93	1.2 Meg.	1			" "
R94	1 Meg.			BTA-1 Meg.	" "
R95	2.7 Meg.	1			" "
R96	2.7 Meg.	1			" "
R97	1000Ω	10	RW10-1	AB-1000	Filter
R98	220KΩ	2		BT-2-220K	Safety Resistor
R99	360KΩ	1		BTA-360K	Filter
R100	220KΩ				Isolation

TRANSFORMER (POWER)

ITEM No.	RATING: PRI.	RATING: SEC. 1	RATING: SEC. 2	RATING: SEC. 3	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.
T1	117VAC @ 1.0A	400VAC	680VCT @ .125 ADC	1.25VAC @ .2A	B-TF11			
		SEC. 4	SEC. 5					
		5VAC @ 3A	6.5VAC @ 4.8A					

TRANSFORMER (SWEEP CIRCUITS)

ITEM No.	RATING: DC RESISTANCE PRI.	RATING: DC RESISTANCE SEC.	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	NOTES
T2	120Ω	240Ω	A-L0107				Hor. Block Osc. Trans.
T3	128Ω	250Ω	A-L0108				Vert.Block Osc.Trans.
T4	210Ω	260Ω	B-TV2				Hor. Block Osc.Trans.

TRANSFORMER (AUDIO OUTPUT)

ITEM No.	RATING: IMPEDANCE PRI.	RATING: IMPEDANCE SEC.	RATING: DC RES. PRI.	RATING: DC RES. SEC.	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: STANCOR PART No.	REPLACEMENT DATA: CHICAGO PART No.	REPLACEMENT DATA: MERIT PART No.	INSTALLATION NOTES
T5	7500Ω	3.3Ω	450Ω	.5Ω	Part of B-EM26	A-3878	RO-13	A-2831	

SPEAKER

ITEM No.	RATING: FIELD RES.	RATING: V. C. IMP.	REPLACEMENT DATA: TEMPLE PART No.	REPLACEMENT DATA: JENSEN PART No.	REPLACEMENT DATA: QUAM PART No.	NOTES
SP1	68Ω	3.3Ω	B-EM26		*	* Supplied on request. State field current and resistance.
	CONE DIA.	V. C. DIA.				
SP2	4 1/2"	9/16"				

PARTS LIST CONTINUED ON PAGE 15

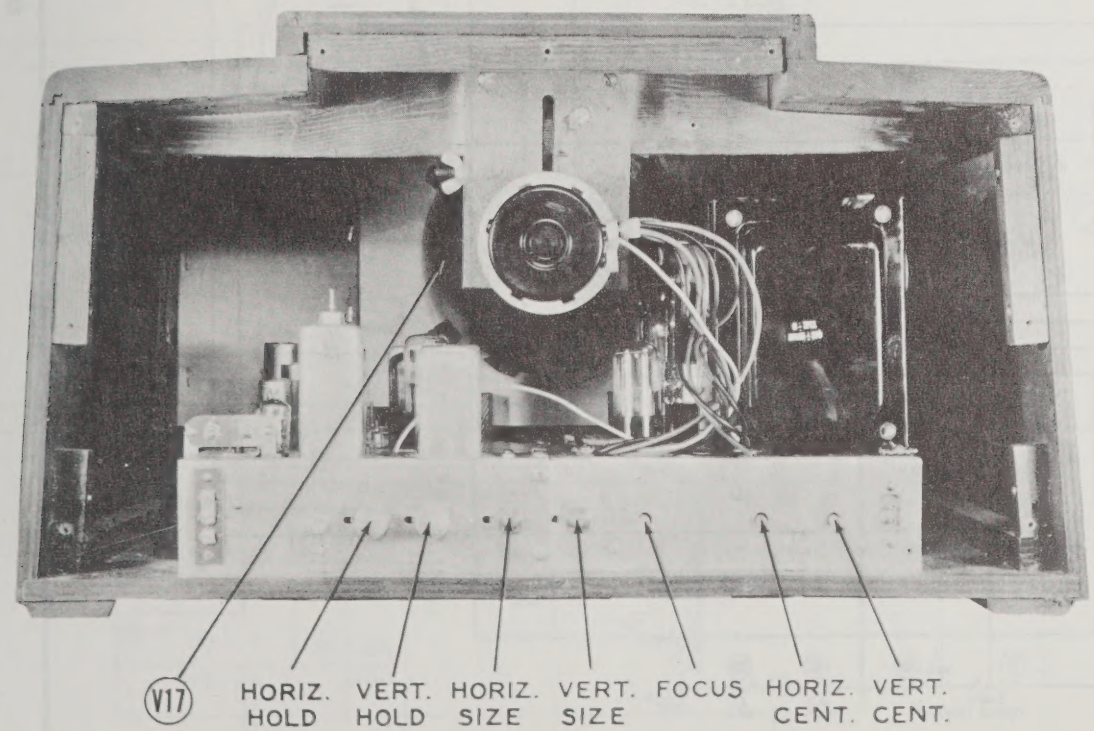
PARTS LIST AND DESCRIPTIONS (Continued)

COILS (RF-IF)

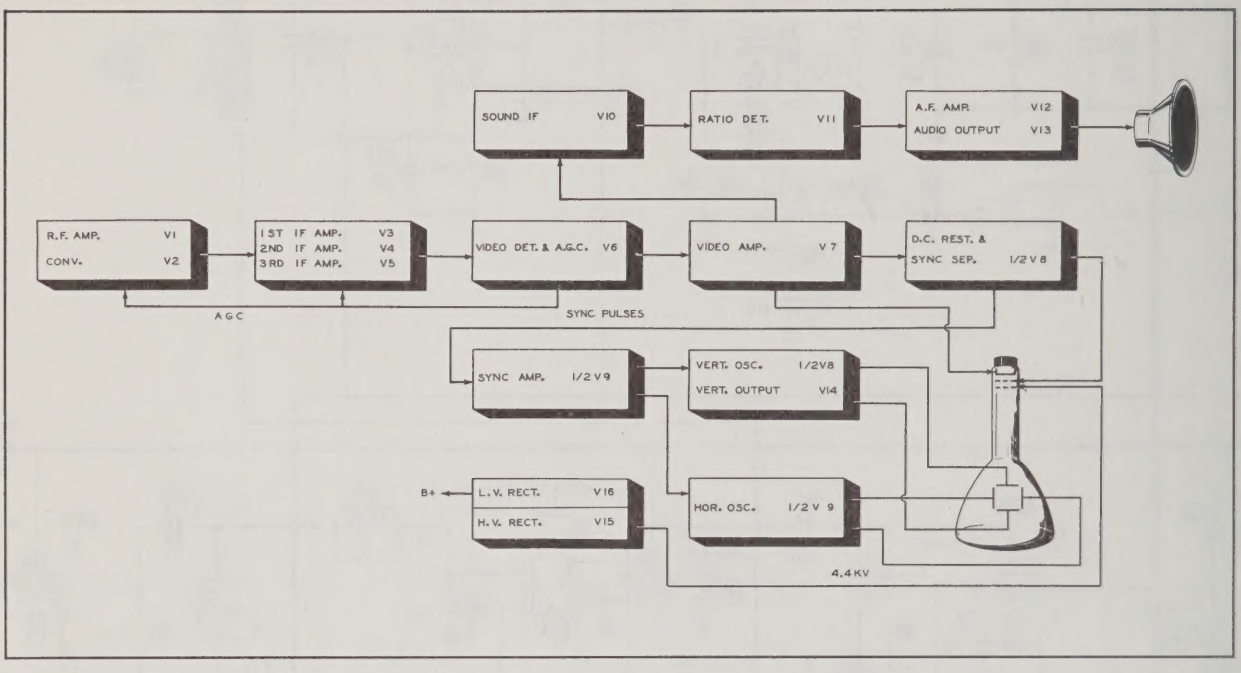
ITEM No.	USE	DC RES.		REPLACEMENT DATA		NOTES
		PRI.	SEC.	TEMPLE PART No.	MEISSNER PART No.	
L1	Ant. Coil	0Ω		A-LR100		Channels 2 and 3
L2	Ant. Coil	0Ω		A-LR101		Channels 3 and 4
L3	Ant. Coil	0Ω		A-LR102		Channels 5 and 6
L4	Ant. Coil	0Ω				
L5	Ant. Coil	0Ω				
L6	Ant. Coil	0Ω				
L7	RF Coil	0Ω		A-LR103		Channels 2 and 3
L8	RF Coil	0Ω		A-LR104		Channels 3 and 4
L9	RF Coil	0Ω		A-LR105		Channels 5 and 6
L10	RF Coil	0Ω				
L11	RF Coil	0Ω				
L12	RF Coil	0Ω				
L13	RF Coil	0Ω		A-LR106		Channel 7
L14	RF Choke	.2Ω		A-LF17		
L15	Osc. Coil	0Ω		A-LO200		Channels 2 and 3
L16	Osc. Coil	0Ω		A-LO201		Channels 3 and 4
L17	Osc. Coil	0Ω		A-LO202		Channels 5 and 6
L18	Osc. Coil	0Ω		A-LO203		Channel 7
L19	Osc. Coil	0Ω		A-LO204		Channels 8 and 9
L20	Osc. Coil	0Ω		A-LO205		Channels 10 and 11
L21	Osc. Coil	0Ω		A-LO206		Channels 12 and 13
L22	1st Video IF	.2Ω		A-TM22		
L23	2nd Video IF	.2Ω		A-TM22		
L24	3rd Video IF	.2Ω		A-TM22		
L25	RF Choke	.2Ω		A-LF9		
L26	4th Video IF	.2Ω		A-TM22		
L27	Peaking	8Ω		A-LF12		160 Microhenry coil, wound on 33KΩ res.
L28	Peaking	17Ω		A-LF14		560 Microhenry coil, wound on 8200Ω res.
L29	Peaking	12Ω		A-LF15		320 Microhenry coil, wound on 33KΩ res.
L30	Peaking	15Ω		A-LF13		Inductance-520 Microhenries
L31	1st Sound IF	2Ω		B-TM21		
L32	Ratio Det.	8Ω	1Ω	B-TM20		
L33	Fil. Choke	.1Ω		A-LF16		
L34	Fil. Choke	.1Ω		A-LF16		
L35	Fil. Choke	.1Ω		A-LF16		

MISCELLANEOUS

ITEM No.	PART NAME	TEMPLE PART No.	NOTES
M1	Switch	B-SR32	Channel selector
	Socket with Leads	B-JS40	Picture tube
	Connector	B-WL5-2	Line cord
	Speaker Socket	A-PM8-1	
	Speaker Plug	A-PM8-2	
	Knob	B-HK34-14	Station selector, contrast, brightness, on-off-volume.
	Knob	C-HK28	Vert. and Horiz. hold, back panel controls.



CABINET-REAR VIEW



BLOCK DIAGRAM

DISASSEMBLY INSTRUCTIONS

MODEL TV-1776

1. Remove four push-on type control knobs.
2. Remove picture tube socket from picture tube.
3. Remove speaker plug from chassis.
4. Remove six 3/8" hex head self-tapping screws holding chassis.
5. Remove chassis out rear of cabinet.

REMOVAL OF PICTURE TUBE

MODEL TV-1776

1. Remove chassis as shown in disassembly instructions.
2. Remove front panel and magnifying lens by pulling on top of panel.
3. Remove four wood screws holding picture tube mask. Remove mask. CAUTION: DO NOT LET PICTURE TUBE DROP WHEN REMOVING MASK.
4. Pull off rubber ring near base of picture tube and remove picture tube out front of cabinet.